DWYER INSTRUMENTS, INC.

RIGHT CHOICE. RIGHT PRICE. RIGHT NOW.

pressure

air quality

flow

temperature

level

process control

data loggers & recorders

test equipment

valves

water/wastewater

powder & bulk solids

building automation systems

2012

www.dwyer-inst.com

TEST EQUIPMENT

Series DPMA
Panel Meter

mA Source Output

Series CSG
Current Voltage Calibrator

CH4

Air

Preheater

Boiler

Combustion gas

Feedwater   Steam

Current/voltage signal generator used to calibrate panel meters.

The Model CSG Digital Signal Generator is perfect for generating or simulating input signals to panel meters and process controllers. The signal generator is capable of sourcing up to 10 VDC or 20 mA in 1 VDC or 1 mA steps. The backlit digital display allows users to quickly compare the reading on the Model CSG to that of the panel meter or process controller. The signal from the Model CSG can be used to set up the upper and lower limits of the process range. It can also be used to insure that set point and alarm functions are working properly on the panel meter or process controller.

Combustion analyzer maximize boiler efficiency while monitoring harmful products of combustion.
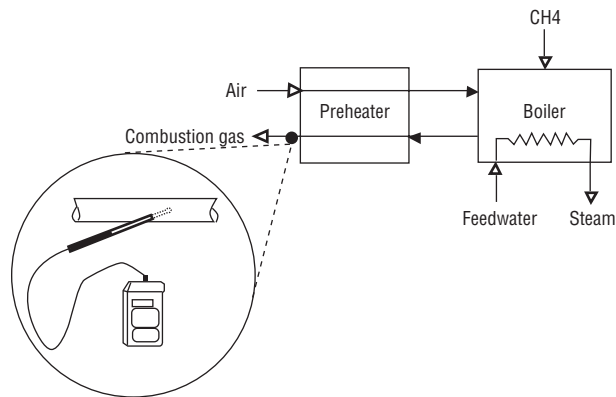
There are several critical factors in attaining efficient combustion for boilers and other combustors. Monitoring the temperature of combustion and minimizing the amount of excess air in the system are undoubtedly essential steps. A Dwyer 1207-NO_X Flue Gas Analyzer can break down the products of combustion, giving an accurate volumetric composition of harmful NO_X compounds, O_2, CO_2, and CO. Additionally, the 1207-NO_X will monitor differential temperature, excess air and poison index. Results can be easily viewed on screen or uploaded to a PC via the user-friendly software.

Typical Applications

Pool

PHO-1 Meter

DPG-100 Digital Pressure Gage

SGL Pressure Gage

PHP-1 Hand Pump
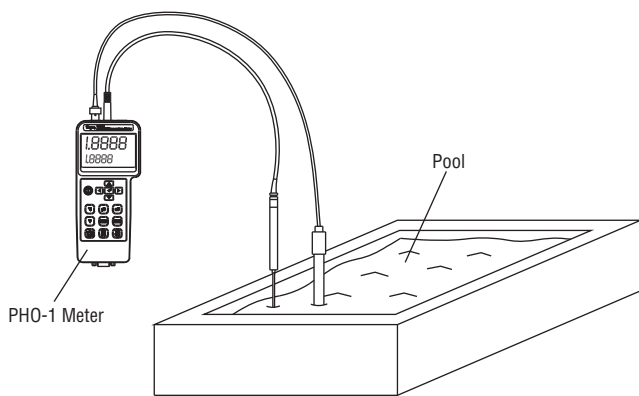
Maximize the effectiveness of chlorine in swimming pools.

The ability of chlorine to kill microorganisms in swimming pools depends on the pH level of the water in a swimming pool. Chlorine is most effective at killing microorganisms at lower pH levels. However, if the pH level is too low, the water will be very corrosive and irritate the skin of the swimmers. The Model PHO-1 accurately measures the levels of pH, ORP, and temperature. Based on the values, the pH level can be lowered or increased by adding acidic solutions or base solutions to the pool to reach the perfect balance.
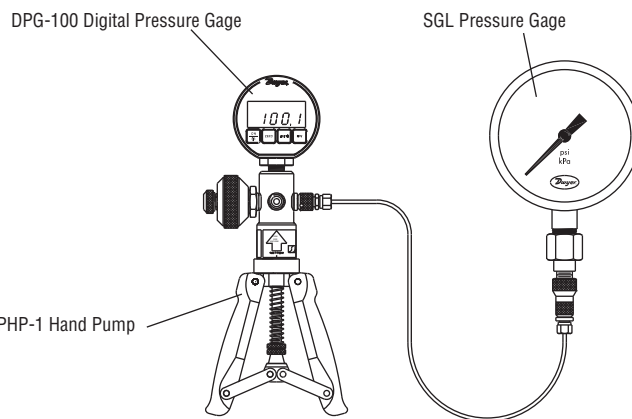
Field calibrate and certify pressure gauges.

Using the series PHP-1 with a DPG-100, a technician can calibrate or certify process pressure gauges up to 1% accurate. The PHP-1 hand pump can easily supply pressures up to 600 PSI by squeezing the handle and adjusting the volume control valve. The pump has two connections to be connected with a test gauge, such as the Dwyer Model DPG-100, and a process gauge, such as the Dwyer SGL series.
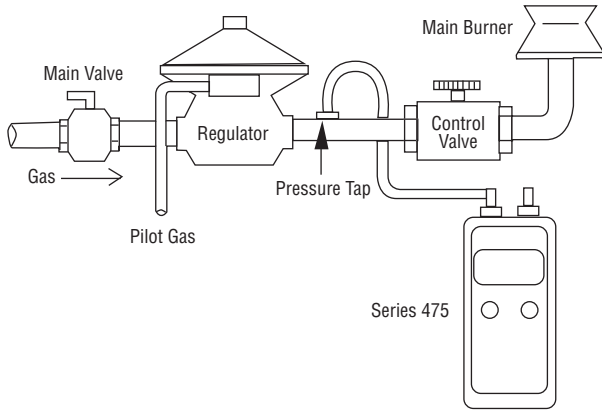
Digital Manometers used to check gas pressure to a heating burner.

Checking the gas pressure to a heating unit on the burner side of the regulator is a standard installation and service routine. The Dwyer® Series 475 Handheld Digital Manometer is a low-cost, durable device that is easily transportable in a pocket or briefcase. Units are highly accurate with 0.5% full scale accuracy. Some servicemen prefer our portable Dwyer Magnehelic® differential pressure gage with dial type scale for field use.
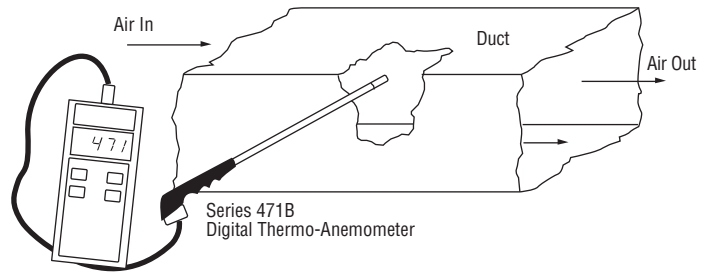
Determine air velocity and temperature levels in ducts or air supply grills.

The Dwyer® Series 471B Digital Thermo-Anemometer is the ideal portable product for determining air velocity and temperature levels in ducts or air supply grills. With a push of a button, FPM and Fahrenheit readings are converted to MPS and Celsius. Readings may be stored and retrieved which allows the user greater efficiency with HVAC balancing at various locations in a building.

Handheld anemometer enables measuring duct flow measurements.

Handheld anemometers are an excellent, portable tool for performing tests on HVAC system performance; however, large rotating vanes can prevent easy access to ducts. Dwyer introduces the MVA Vane Thermo-Anemometer to eliminate this problem. Additionally, simple keypad programming enables the user to view volumetric flow rates in CFM or CMM.
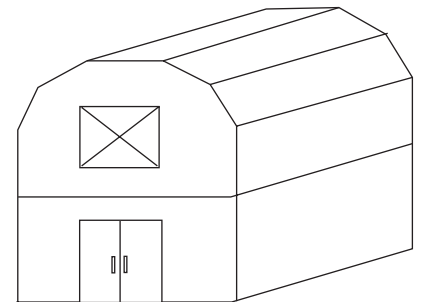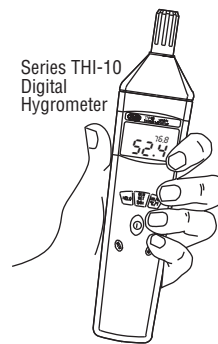
Quickly measure humidity and temperature levels in ambient air.

The Dwyer® THI-10 Handheld Digital Hygrometer is a simple, portable device for quickly measuring humidity and temperature levels in ambient air. The dew point and wet-bulb temperature readings are derived from relative humidity and temperature measurements. The THI-10 is often used in agricultural applications where proper humidity and temperature levels are critical in plant or animal well being.

TEST EQUIPMENT

Typical Applications

Series 476A Single Pressure Digital Manometer & Series 478A Digital Manometer

Electronic Zeroing, ±1.5% Accuracy

CE

2-13/16 [71.58]

6-17/32 [165.82]

5-57/64 [149.68]

SERIES 476A DIGITAL MANOMETER

2-13/16 [71.58]

6-17/32 [165.82]

5-57/64 [149.68]

SERIES 478A DIGITAL MANOMETER

29/32 [22.99]
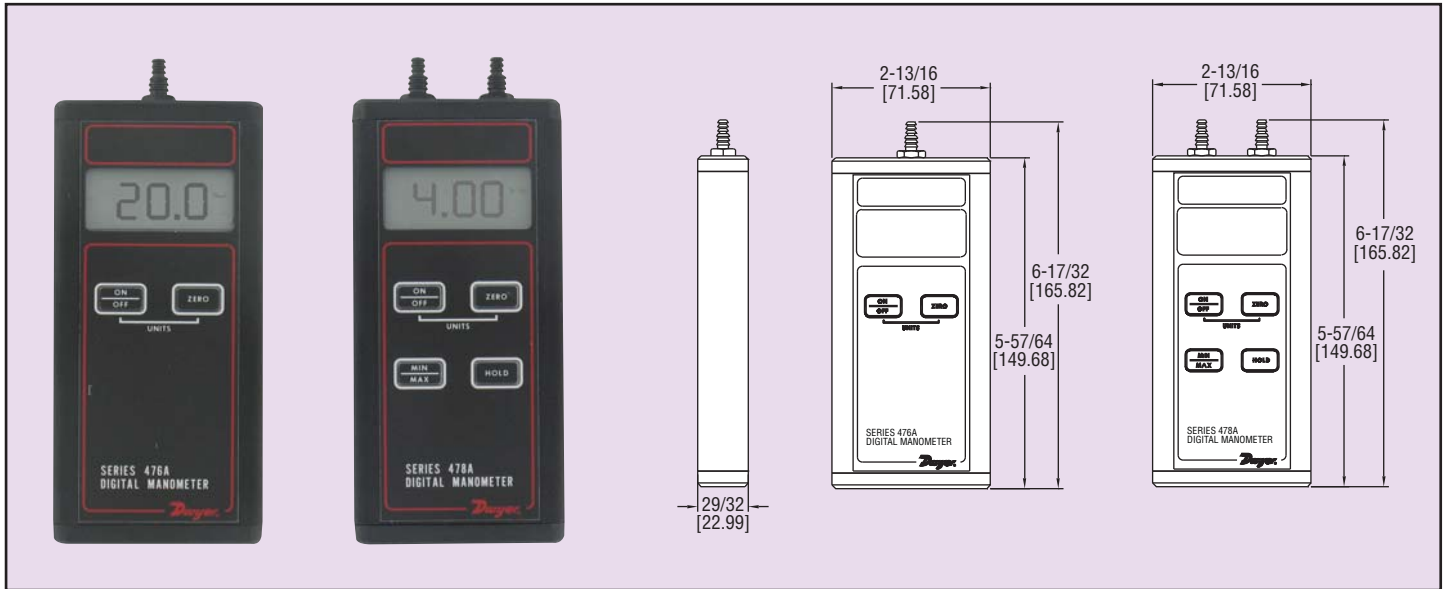
Ideal for field or laboratory use, the Model 476A Single Pressure Digital Manometer measures low pressures from -20 to 20″ w.c. with ±1.5% full scale accuracy. Designed especially for the HVAC contractor, the Model 476A can be used to set supply pressures, verify pressure switch operation, adjust regulators, check pneumatic systems and computer peripherals. The rugged, handheld unit is constructed with an extruded aluminum case for exceptional durability.

The Series 478A manometer can be used to measure positive, negative, or differential pressures. The unit features selectable units, auto zero, hold and a Min/Max function. Press the Hold key to freeze the current pressure measurement on the display. The 478A manometer includes a zeroing button to null out any minor pressure differences.

FEATURES
• One-button auto-zero function
• Auto power off.
• Large, easy-to-read display.
• Extruded aluminum case.
• Instant selection from up to eight english/metric units.

Model 476A-0, Digital Manometer, -20 to 20″ w.c.
Model 478A-0, Digital Differential Manometer, -4-0-4″ w.c.
Model 478A-1, Digital Differential Manometer, -60-0-60″ w.c.

SPECIFICATIONS
Service: Air and compatible gases.
Wetted Materials: Consult factory.
Accuracy: ±1.5% F.S. at 72°F (22.2°C). Includes linearity and repeatability.
Pressure Hysteresis: ±0.1% of F.S.
Pressure Limits: 5 psig (.74 bar).
Temperature Limits: 0 to 140°F (-17.8 to 60°C).
Compensated Temperature Limits: 32 to 104°F (0 to 40°C).
Thermal Effect: 0.05% F.S./°F.
Display: 4 digit LCD (.425″H x .234″W digits).
Power Requirements: 9V alkaline battery. Battery included but not connected.
Process Connections: For use with 3/16″ or 1/4″ I.D. tubing.
Weight: 10.8 oz (306 g).
Agency Approvals: CE.

A-402A CARRYING CASE — Tough gray nylon pouch protects any Series 476A/478A Manometer. Double zippered for quick and easy access. With belt loop that snaps closed.

7-1/2″H x 3″W x 2-1/4″D (191 x 76 x 57 mm)

Model	Range in w.c.	Available Pressure Units								Resolution in w.c.	Maximum Pressure
		bar	psi	in Hg	kPa	in w.c.	mm Hg	mbar	mm w.c.		
476A-0	-20.0 to 20.0	.0498	0.723	1.471	4.98	20.00	37.4	49.8	508	0.02	5 psig

Model	Range in w.c.	Available Pressure Units									Resolution in w.c.	Maximum Pressure
		bar	psi	in Hg	kPa	in w.c.	mm Hg	mbar	mm w.c.	Pa		
478A-0	-4.00 to 4.00		.1445	.294	0.996	4.00	7.47	9.96	101.6	996	0.01	5 psig
478A-1	-60.0 to 60.0	.1495	2.168	4.41	14.95	60.0	112.1	149.5	1524		0.1	5 psig

Dwyer®

Series 475

Mk III Handheld Digital Manometer
Ranges from 1 in. w.c. to 150 psid, ±0.5% Accuracy

CE | FM APPROVED

5/8 [15.88]
1-1/16 [26.98]
BARBED FOR 1/8 OR 3/16 I.D. TUBING 475-7 & 475-8 ONLY; 1/8 I.D. X 3/16 O.D. TUBING
5-7/8 [149.23]
29/32 [23.02]
2-13/16 [71.44]
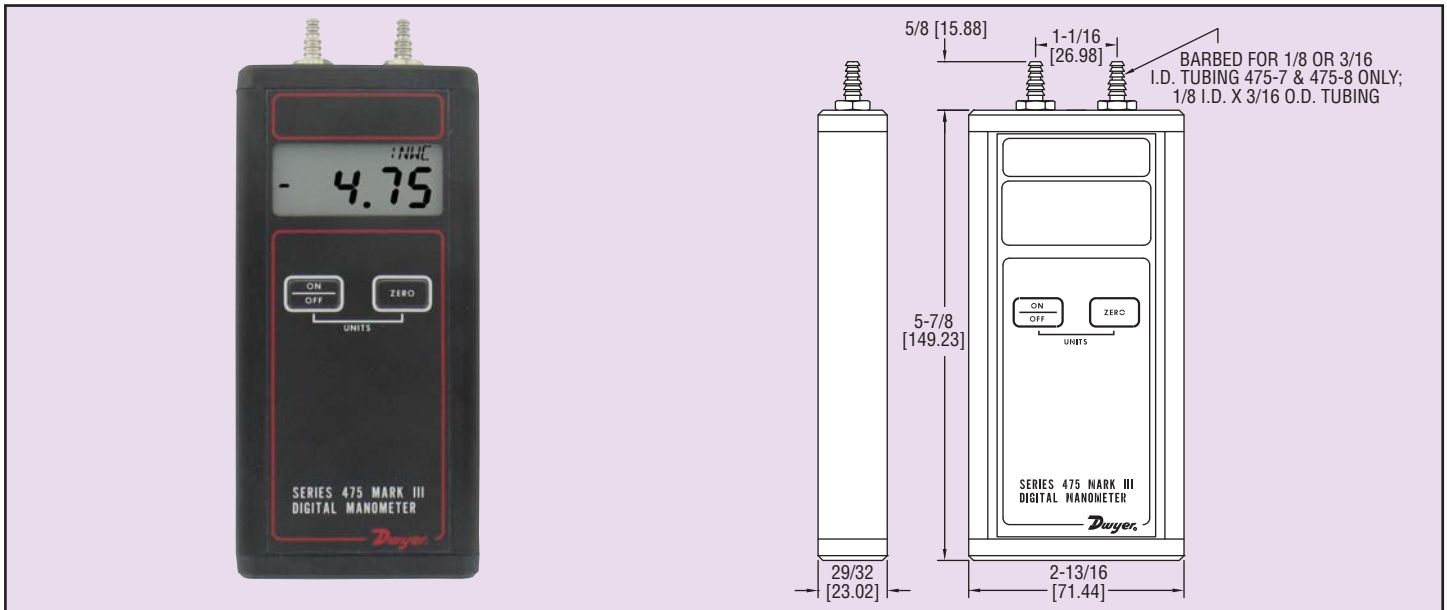
The Dwyer® Series 475-FM Mark III Handheld Digital Manometer is ideal for field calibration, monitoring or trouble shooting HVAC systems, clean rooms, or a wide range of other low pressure pneumatic systems. This handy instrument measures positive, negative or differential pressures of air and natural gases in ranges from 1 in. w.c. (0.249 kPa) to 150 psid (10.34 bar). The Series 475-FM is approved and is intrinsically safe for hazardous locations, Class 1, Div. 1, Group A, B, C, D, T4. Its simple operation and easy to read digital display make it an indispensable test instrument for the plant engineer, industrial hygienist and HVAC technician. When used with a Dwyer® Pitot tube (see Flow and Air Velocity), the Series 475-FM Mark III can also be used as an air velocity gage. See the complete 475-1-FM-AV kit described below.

The Series 475-FM Mark III is housed in a durable extruded aluminum case with its solid state circuitry mounted on a tough fiberglass epoxy circuit board. To meet the most demanding applications and to provide stability of instrument reading, the 1 in. w.c. range is compensated for position sensitivity through the use of a unique patented dual sensor system. A standard 9 volt battery provides up to 100 hours of operation. Dual push pads on the front panel control on-off, auto zero, and pressure unit selection. No set-up or leveling. The large 0.42″ LCD display is easy to read, minimizing data collection errors. Units include a "low battery" indicator. The pressure sensor used is a highly stable silicon piezoresistive device. Standard connections are dual sized for 1/8" or 3/16" I.D. vinyl or rubber tubing. Complete instructions are conveniently printed on rear of housing.

SPECIFICATIONS
Service: Air and compatible combustible gases.
Wetted Materials: Consult factory.
Accuracy: ±0.5% F.S., 60 to 78°F (15.6 to 25.6°C); ±1.5% F.S. from 32 to 60°F and 78 to 104°F (0 to 15.6°C and 25.6 to 40°C).
Pressure Hysteresis: ±0.1% of full scale.
Pressure Limits: See chart.
Temperature Limits: 0 to 140°F (-17.8 to 60°C).
Compensated Temperature Limits: 32 to 104°F (0 to 40°C).
Storage Temperature Limits: -4 to 176°F (-20 to 80°C).
Display: 0.42″ (10.6 mm) 4 digit LCD.
Resolution: See chart.
Power Requirements: 9 volt alkaline battery. Battery not connected.
Weight: 10.8 oz (306 g).
Connections: Two barbed connections for use with 1/8″ (3.18 mm) or 3/16″ (4.76 mm) I.D. tubing. Two compression fittings for use with 1/8″ (3.18 mm) I.D. x 1/4″ (6.35 mm) O.D. tubing for 475-7-FM & 475-8-FM only.
Agency Approvals: FM, CE.

FEATURES
• New low range option 0-1.000 in. w.c.
• Measures positive, negative and differential pressures
• Rugged, extruded aluminum case
• Lightweight, fast and easy to use
• Selectable english/metric units
• FM approved

475-AV AIR VELOCITY KIT — Includes the Series 475-FM Manometer, two A-303 static pressure tips two 9 ft. lengths 3/16″ I.D. rubber tubing, no. 166-6-CF Pitot tube, A-397 step drill, A-532 air velocity slide chart and instruction bulletin H-11, all packed in a tough, molded plastic carrying case with die cut foam liner. To order, add AV suffix to any standard 475 model no.

Example: 475-1-FM-AV

Model	English Range	Metric Range	Maximum Pressure
475-000-FM	0-1.000 in w.c.	.2491 kPa	5 psig
475-00-FM	0-4.000 in w.c.	0.996 kPa	5 psig
475-0-FM	0-10.00 in w.c.	2.491 kPa	5 psig
475-1-FM	0-20.00 in w.c.	4.982 kPa	10 psig
475-2-FM	0-40.00 in w.c.	9.96 kPa	10 psig
475-3-FM	0-200.0 in w.c.	49.82 kPa	30 psig
475-4-FM	0-10.00 psi	.6895 bar	30 psig
475-5-FM	0-20.00 psi	1.379 bar	60 psig
475-6-FM	0-30.00 psi	2.069 bar	60 psig
475-7-FM	0-100.0 psi	6.895 bar	150 psig
475-8-FM	0-150.0 psi	10.34 bar	200 psig

A-402A Carrying Case — Tough gray nylon pouch protects any Series 475 Manometer. Double zippered for quick and easy access. With belt loop that snaps closed.

7-1/2″H x 3″W x 2-1/4″D (191 x 76 x 57 mm)

Series 477

Handheld Digital Manometer

Selectable Pressure Units, ±0.5% Accuracy, FM Approved Intrinsically Safe for Hazardous Locations, Class 1, Div. 1, Group A, B, C, D, T4

CE FM APPROVED

5/8 [15.88]
1-1/16 [26.98]
BARBED FOR 1/8 OR 3/16 I.D. TUBING
5-7/8 [149.23]
29/32 [23.02]
2-13/16 [71.44]

Series 477 Handheld Digital Manometers are packed with features you need to make pressure measurement and recording faster, easier and more accurate than ever. First, you can instantly select from up to nine of the most widely used pressure units without having to waste time and risk mistakes with tedious conversions. Next, a non-volatile memory function enables storage of up to 40 readings — perfect for HVAC technicians making Pitot tube traverses of airflow readings across a duct. The FM approved models are intrinsically safe for hazardous locations, Class 1, Div. 1, Group A, B, C, D, T4.

When working in poorly lighted areas, just switch on the handy backlight feature. It automatically shuts itself off after 20 minutes to minimize battery drain. Electronic zeroing means you simply touch a single key to perfectly null out any minor pressure differences. A display HOLD key freezes the current pressure for those all-too-common situations where readings fluctuate. We even included an audible alarm to warn you of overpressure plus a visual alarm warning in case ambient noise levels are too high to hear the alarm. Audible alarm also confirms a value has been stored, eliminating the need to observe display during a duct traverse.

FEATURES
- New low pressure ranges
- USB option comes with cable and software for easy data downloading
- Instant selection from up to nine english/metric units
- Stores 40 readings in memory for later reference
- Measure positive, negative or differential pressures
- Large easy-to-read 0.4″ LCD display includes switchable backlight for great visibility — anywhere
- Both audible and visual overpressure alarms
- Includes + and - indicators plus low battery warning
- Operates up to 100 Hours on a single 9 volt battery

SPECIFICATIONS
Service: Air and compatible gases. FM models air and compatible combustible gases.
Wetted Materials: Consult factory.
Accuracy: ±0.5% F.S., 60 to 78°F (15.6 to 25.6°C); ±1.5% F.S. from 32 to 60°F and 78 to 104°F (0 to 15.6°C and 25.6 to 40°C).
Pressure Hysteresis: ±0.1% of full scale.
Pressure Limits: See chart.
Temperature Limits: 0 to 140°F (-17.8 to 60°C).
Compensated Temperature Limits: 32 to 104°F (0 to 40°C).
Storage Temperature Limits: -4 to 176°F (-20 to 80°C).
Display: 0.42″ (10.6 mm) 4 digit LCD.
Response Time: 1 seconds.
Resolution: See chart.
Power Requirements: 9 volt alkaline battery. Battery included but not connected.
Weight: 10.2 oz (289 g).
Connections: Two barbed connections for use with 1/8″ (3.18 mm) or 3/16″ (4.76 mm) I.D. tubing. Two compression fittings for use with 1/8″ (3.18 mm) I.D. x 1/4″ (6.35 mm) O.D. tubing for 477-7-FM & 477-8-FM only.
Agency Approvals: CE and FM.

A-402A Carrying Case — Tough gray nylon pouch protects any Series 477 Manometer. Double zippered for quick and easy access. With belt loop that snaps closed.
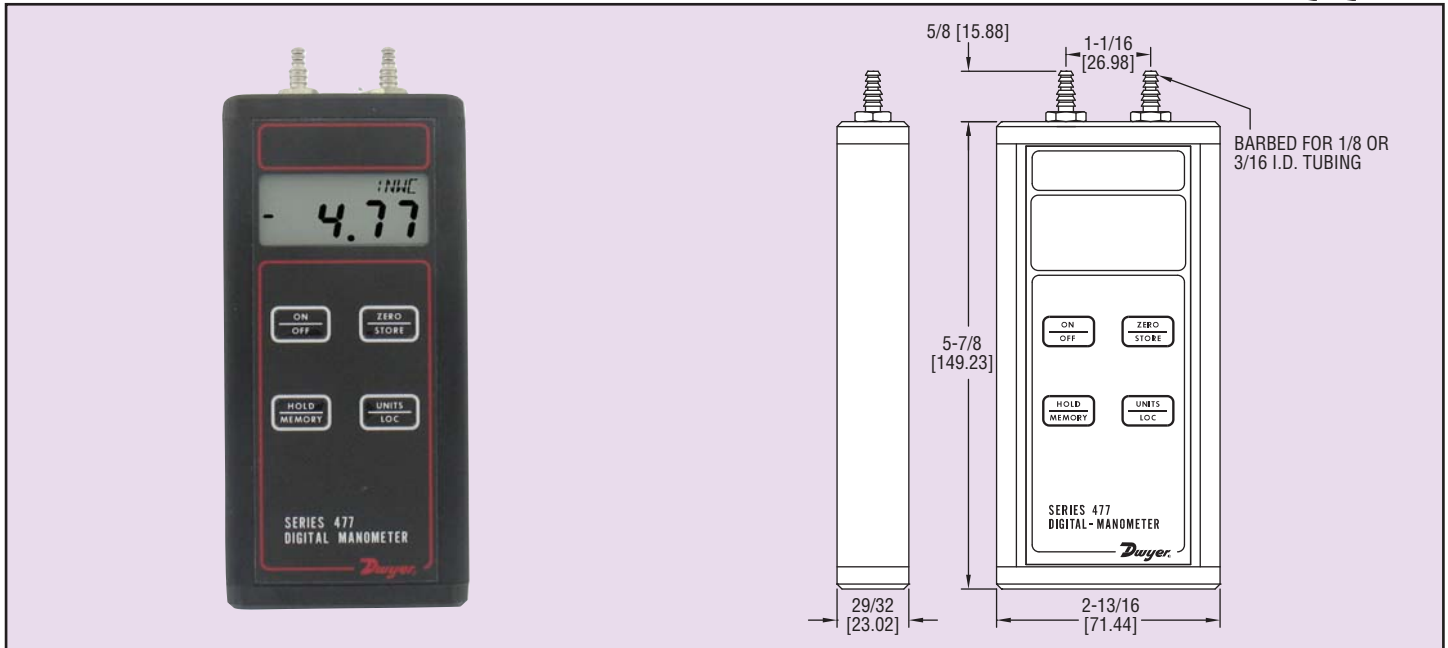
7-1/2″H x 3″W x 2-1/4″D (191 x 76 x 57 mm)

| Model* | Range | Available Pressure Units | | | | | | | | | Maximum Pressure |
		bar	psi	in Hg	kPa	in w.c.	mm Hg	mbar	mm w.c.	Pa	
477-000-FM	0-1.000 in w.c.			.0736	.2491	1.000	1.868	2.491	25.40	249.1	5 psig
477-00-FM	0-4.000 in w.c.		.1445	.2942	0.996	4.000	7.473	9.96	101.6	996	5 psig
477-0-FM	0-10.00 in w.c.		.3613	.7355	2.491	10.00	18.68	24.91	254.0	2491	5 psig
477-1-FM	0-20.00 in w.c.	.0498	.7225	1.471	4.982	20.00	37.36	49.82	508.0	4982	10 psig
477-2-FM	0-40.00 in w.c.	.0996	1.445	2.942	9.96	40.00	74.73	99.6	1016	9964	10 psig
477-3-FM	0-200.0 in w.c.	.4982	7.225	14.71	49.82	200.0	373.6	498.2	5080		30 psig
477-4-FM	0-10.00 psi	.6895	10.00	20.36	68.95	276.8	517.1	689.5	7031		30 psig
477-5-FM	0-20.00 psi	1.379	20.00	40.72	137.9	553.6	1034	1379			60 psig
477-6-FM	0-30.00 psi	2.069	30.00	61.08	206.9	830.4	1551	2069			60 psig
477-7-FM	0-100.0 psi	6.895	100.0	203.6	689.5	2768	5171	6895			150 psig
477-8-FM	0-150.0 psi	10.34	150.0	305.4	1034	4152	7757				200 psig

Handheld Digital Manometer

Precise Air Pressure Measurement, ±0.1% F.S. Accuracy

Dwyer®
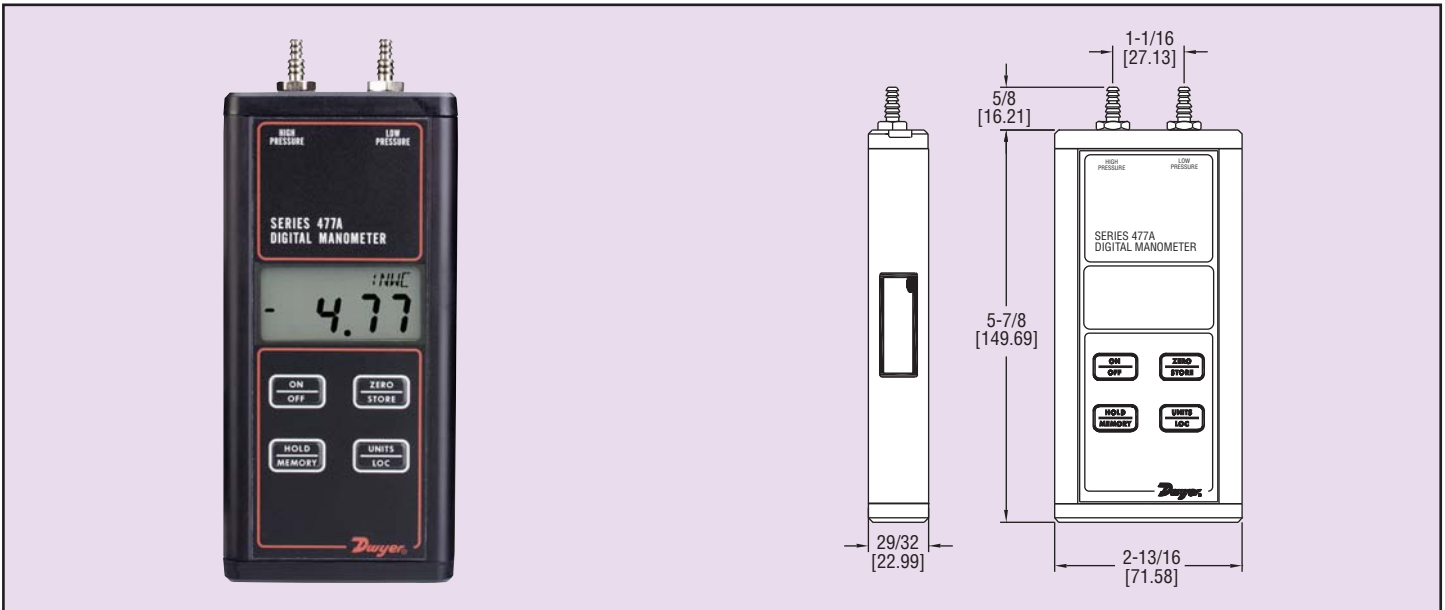
The Popular Model 477 is now available with 0.1% full scale accuracy in the new **Series 477A**. The 477A contains a highly accurate differential pressure sensor that offers a 0.1% full scale accuracy on air ranges from 20˝ w.c. to 100 psid. Series 477A Handheld Digital Manometers are packed with features needed to make pressure measurement and recording faster, easier and more accurate than ever. Instantly select from up to nine of the most widely used pressure units without having to waste time and risk mistakes with tedious conversions. A non-volatile memory function enables storage of up to 40 readings — perfect for HVAC technicians making Pitot tube traverses of airflow readings across a duct. The 477A is also ideal for maintenance personnel or technicians that require a highly accurate standard to check their instrumentation or equipment to ensure proper performance.

When working in poorly lighted areas, just switch on the handy backlight feature. The manometer automatically shuts itself off after 20 minutes to minimize battery drain. Electronic zeroing means you simply touch a single key to perfectly null out any minor pressure differences. A display HOLD key freezes the current pressure for those all-too-common situations where readings fluctuate. Included is an audible alarm to warn of overpressure plus a visual alarm warning in case ambient noise levels are too high to hear the alarm. Audible alarm also confirms a value has been stored, eliminating the need to observe display during a duct traverse.

Clear, concise operating instructions for all functions are printed on the rear of the rugged extruded aluminum case for quick reference. One-piece front membrane fully protects all keys from dust and moisture; wipes clean in seconds. Detailed written instructions, a wrist strap and 9 volt alkaline battery are included.

SPECIFICATIONS
Service: Air and non-combustible compatible gases.
Wetted Parts: Consult factory.
Accuracy: ±0.10% of full scale from 60 to 78°F (15.6 to 25.6°C); ±1% of full scale from 32-60 and 78-104°F (0-15.6 and 25.6-40°C).
Pressure Hysteresis: ±0.1% of full scale.
Pressure Limits: See chart.
Temperature Limits: 32 to 104°F (0 to 40°C).
Storage Temperature Limits: -4 to 176°F (-20 to 80°C).
Display: 0.42˝ (10.6 mm) 4 digit LCD.
Resolution: See chart.
Power Requirements: 9 volt alkaline battery. Battery included but not connected.
Weight: 10.2 oz. (289 g).
Connections: Two barbed connections for use with 1/8˝ (3.18 mm) or 3/16˝ (4.76 mm) I.D. tubing for 477A-1, 477A-2, 477A-3, 477A-4 and 477A-5 only. Two compression fittings for use with 1/8˝ (3.18 mm) I.D. x 1/4˝ (6.35 mm) O.D. tubing for 477A-6 and 477A-7 only.

FEATURES
• Measure positive, negative, or differential pressures
• Instant selection from up to nine english/metric units
• Stores 40 readings in memory for later reference
• Both audible and visual overpressure alarms
• Operates up to 100 hours on a single 9 volt battery
• New adjustable damping feature for averaging fluctuating reading

Model	Range	Available Pressure Units										Maximum Pressure
		bar	psi	in Hg	kPa	in w.c.	mm Hg	mbar	FTWC	mm w.c.	Pa	
477A-1	0-20.00 in w.c.	.0498	.7225	1.471	4.982	20.00	37.36	49.82	1.667	508.0	4982	3 psig
477A-2	0-40.00 in w.c.	.0996	1.445	2.942	9.96	40.00	74.73	99.6	3.333	1016	9964	3 psig
477A-3	0-200.0 in w.c.	.4982	7.225	14.71	49.82	200.0	373.6	498.2	16.67	5080		15 psig
477A-4	0-10.00 psi	.6895	10.00	20.36	68.95	276.8	517.1	689.5	23.07	7031		30 psig
477A-5	0-30.00 psi	2.069	30.00	61.08	206.9	830.4	1551	2069	69.20			60 psig
477A-6	0-50.00 psi	3.447	50.00	101.8	344.7	1384	2585	3447	115.3			100 psig
477A-7	0-100.0 psi	6.895	100.0	203.6	689.5	2768	5171	6895	230.7			200 psig

Precision Digital Pressure Manometer

Up to 0.05% Accuracy, Graphical Display, Data Logging Capability

CE
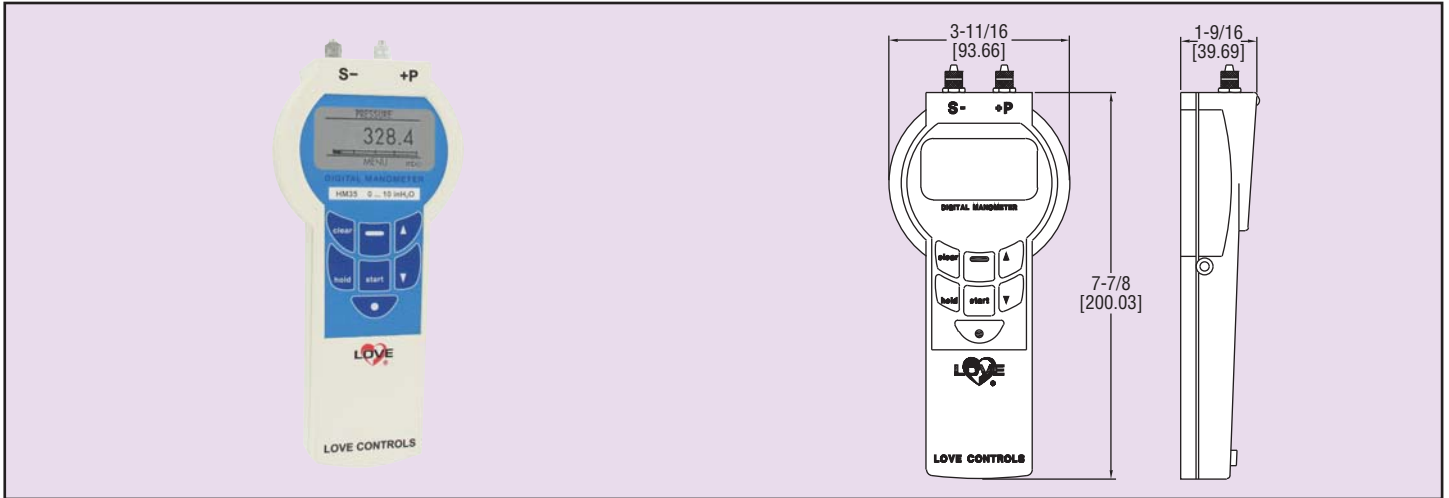
The High Precision Series HM35 Digital Manometer is designed to reliably measure and log pressure measurements for critical applications. This family of manometer can measure absolute pressure, differential pressure or gauge pressure with up to 0.05% accuracy. The data logging function can store up to 10,742 readings and transmit the readings to a PC through an IR serial port. The large display can graphically display trends in the data as well as peaks and valleys. The series HM35 comes standard with a calibration certificate so that the instrument can be used as a secondary calibration standard when testing other pressure instrumentation. This manometer is ideal for laboratories, calibration facilities, and other critical pressure applications.

ACCESSORIES
HM28-0, 1/8″ NPT Adapter (1 Piece)
HM35-1, Communication software
HM35-2, Infrared RS-232 Serial Adapter. Required to download stored data to a PC
HM35-3, External Power Converter with U.S. plug adapter. Input 100 to 240 VAC, 50/60 Hz

SPECIFICATIONS
Pressure Connections: Hose 4/6 mm or 1/8″ NPT.
Accuracy: (Includes linearity, hysteresis, and repeatability): Depending on model.
    ±0.20% full scale ±1 digit
    ±0.10% full scale ±1 digit
    ±0.05% full scale ±1 digit
Measuring Media: Instrument air or inert gases that are compatible with 18/8 stainless steel.
Temperature Limits: 32 to 122°F (0 to 50°C).
Storage Temperature: -4 to 140°F (-20 to 60°C).
Humidity: Maximum 95% RH non-condensing.
Display: Graphical back lit LCD. 128 x 64 points.
Power Requirements: 3 x 1.5 VDC Mignon - Cell AA batteries (included). Can operate on 6 to 9 VDC external power.
Current Consumption: 25 mA without back lit display, IR, or buzzer.
Memory: 10,742 readings. Recording intervals adjustable from 1 second to 24 hours or manual.
Case Protection: IP54.
Weight: 10.5 oz (300 g).
Agency Approval: CE.

Error Limit 0.2% F.S. for gauge, vacuum, and differential pressure

Model	Range	Over Pressure
HM3531DLB300	0-10 in w.c. (0-2.5 kPa)	50 in w.c.
HM3531DLC300	0-28 in w.c. (0-7 kPa)	140 in w.c.
HM3531DLE300	0-80 in w.c. (0-20 kPa)	600 in w.c.
HM3531DLF300	0-120 in w.c. (0-30 kPa)	600 in w.c.
HM3531DLG300	0-200 in w.c. (0-50 kPa)	58 psi
HM3531DLH300	0-14.5 psi (0-100 kPa)	58 psi

For higher accuracy models change the 10th digit from a 3 to a 1 (0.05% F.S.), 2 (0.1% F.S.), or 6 (0.1% of reading). For example, 0 to 28 in of w.c. with 0.05% accuracy would be model number HM3531DLC100. Higher accuracies are only available on 0-28 in of w.c. range or higher.
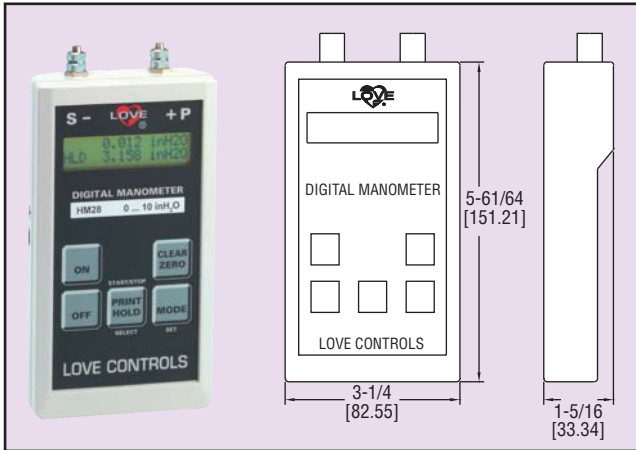
LOVE®

Series HM28

Handheld Digital Manometer

High Accuracy (0.2%, 0.1% or 0.05%), Differential, Gage or Absolute

CE

S – LOVE +P

DIGITAL MANOMETER
HM28   0 ~ 10 inH₂O

DIGITAL MANOMETER

LOVE CONTROLS

5-61/64
[151.21]

3-1/4
[82.55]

1-5/16
[33.34]

The Series HM28 Digital Hand-Held Manometer is a precision instrument designed to measure a wide range of pressures to a very high accuracy. The unit incorporates a variety of features in an easy to use format that makes it useful in a wide variety of applications. Features include: measurement in all common pressure ranges, display resolution to 0.001, differential or relative measurement, two line liquid crystal display, and adjustable auto power off to conserve battery.

We are so proud of the accuracy of the HM28 that we provide a certificate of calibration with the unit at no additional cost. Depending on your application, the HM28 can be used as a secondary calibration standard for your other pressure instrumentation.

ACCESSORIES
HM28-0, 1/8″ NPT Adaptor 1 piece
HM28-1, Communication Software & Cable
HM28-2, Universal Power Adaptor

SPECIFICATIONS
Pressure Connection: Hose; 4/6 mm or 1/8″ NPT.
Accuracy: (Includes linearity, hysteresis, and repeatability): per order code.
   ±0.20% full scale ±1 digit
   ±0.10% full scale ±1 digit
   ±0.05% full scale ±1 digit
Measuring Media: Instrument air or inert gases. For HM28G3XXXXX, any material compatible with 18/8 stainless steel.
Temperature Limits: 23 to 122°F (-5 to 50°C).
Storage Temperature: -4 to 140°F (-20 to 60°C).
Humidity: 30 to 95% rH, non-condensing.
Display: 2 line, 16 character, dot matrix LCD, with switchable display sizes.
Battery: 9V alkaline (included). Can operate from external power supply of 7 to 14 VDC.

Current Consumption: <9 mA.
Memory: 964 measured values. Recording intervals adjustable from manual, 1, 5, 10, 20, 30 seconds, 1, 2, 3, 5, 10, 30, 60 minutes.
Case Protection: IP54.
Case Dimensions: 6 x 3.27 x 1.34 in (152 x 83 x 34 mm).
Weight: 9.5 oz (270 g).
Maximum Measurement Rates: Stand alone: 2-1/2 readings/sec (0.1% and 0.05% ratings), 5 readings/sec (0.2% rating). Output to RS-232: 20 measurements/sec (0.2% rating). 10 measurements/sec (0.1% and 0.05% ratings).
RS-232 Baud Rate: Adjustable, 1200, 2400, 4800, or 9600 baud.
Agency Approvals: CE.

Part Number	Features
Error limit 0.2% F.S. for gage, underpressure and differential pressure	
HM28D3B10000	0-10 in w.c. (2.5 kPa)
HM28D3C10000	0-28 in w.c. (7 kPa)
HM28D3F10000	0-120 in w.c. (30 kPa)
Error limit 0.05% F.S. for gage, underpressure and differential pressure	
HM28D3C30000	0-28 in w.c. (7 kPa)
HM28D3F30000	0-120 in w.c. (30 kPa)
HM28D3K30000	0-100 psi (700 kPa)
For Absolute pressure	
HM28A3I10000	0-15.9 psia (0.2% F.S. (110 kPa abs)

Consult factory for 0.10% models.

Dwyer®

Series 490

Wet/Wet Handheld Digital Manometer

Liquid & Gas Pressure Measurement, ±0.5% F.S. Accuracy

CE

SERIES 490
WET/WET
DIGITAL MANOMETER

4.90

Series 490 Digital Manometers are versatile, hand-held, battery operated manometers available in several basic ranges for positive or positive differential pressure measurement and can tolerate most liquid media compatible with 316LSS. A memory function allows storage of up to 40 readings for later recall and a backlight provides auxiliary lighting for hard-to-see locations.

Standard are a hold feature and both visual and audible overpressure alarms. A new feature added to the Series 490 is a field adjustable damping. This allows the user to choose the level of display averaging rate corresponding to the fluctuation level common in many applications. A 9V alkaline battery is included that provides up to 100 hours of operation.

SPECIFICATIONS
Service: Compatible gases & liquids.
Wetted Materials: Without valve: 316L SS; Additional wetted parts with 3-way valve option: Buna-N, silicone grease, PTFE, brass 360, copper, reinforced acetal copolymer.
Accuracy: ±0.5% F.S., 60 to 78°F (15.6 to 25.6°C); ±1.5% F.S. from 32 to 60°F and 78 to 104°F (0 to 15.6°C and 25.6 to 40°C).
Pressure Hysteresis: ±0.1% of full scale.
Pressure Limits: See chart.

Temperature Limits: 32 to 104°F (0 to 40°C).
Storage Temperature Limits: -4 to 176°F (-20 to 80°C).
Display: 0.42″ (10.6 mm) 4 digit LCD.
Resolution: See chart.
Power Requirements: 9 volt alkaline battery. Battery included but not connected.
Weight: 14.1 oz (400 g).
Connections: Two 1/8″ (3.18 mm) female NPT.
Agency Approvals: CE.

Model	Range	Available Pressure Units								Maximum Pressure
		bar	psi	in Hg	kPa	FTWC	in w.c.	mm Hg	mbar	
490-1	0-15.00 psi	1.034	15.00	30.54	103.4	34.60	415.2	775.7	1034	30 psig
490-2	0-30.00 psi	2.069	30.00	61.08	206.9	69.20	830.4	1551	2069	60 psig
490-3	0-50.00 psi	3.447	50.00	101.8	344.7	115.3	1384	2585	3447	100 psig
490-4	0-100.0 psi	6.895	100.0	203.6	689.5	230.7	2768	5171	6895	200 psig
490-5	0-500.0 psi	34.47	500.0	1018	3447	1153				1000 psig
490-6	0-200.0 psi	13.79	200.0	407.2	1379	461.3	5536			400 psig

A-402A, Carrying Case — Tough gray nylon pouch protects any Series 490 Wet/Wet Handheld Digital Manometer. Double zippered for quick and easy access. With belt loop that snaps closed.
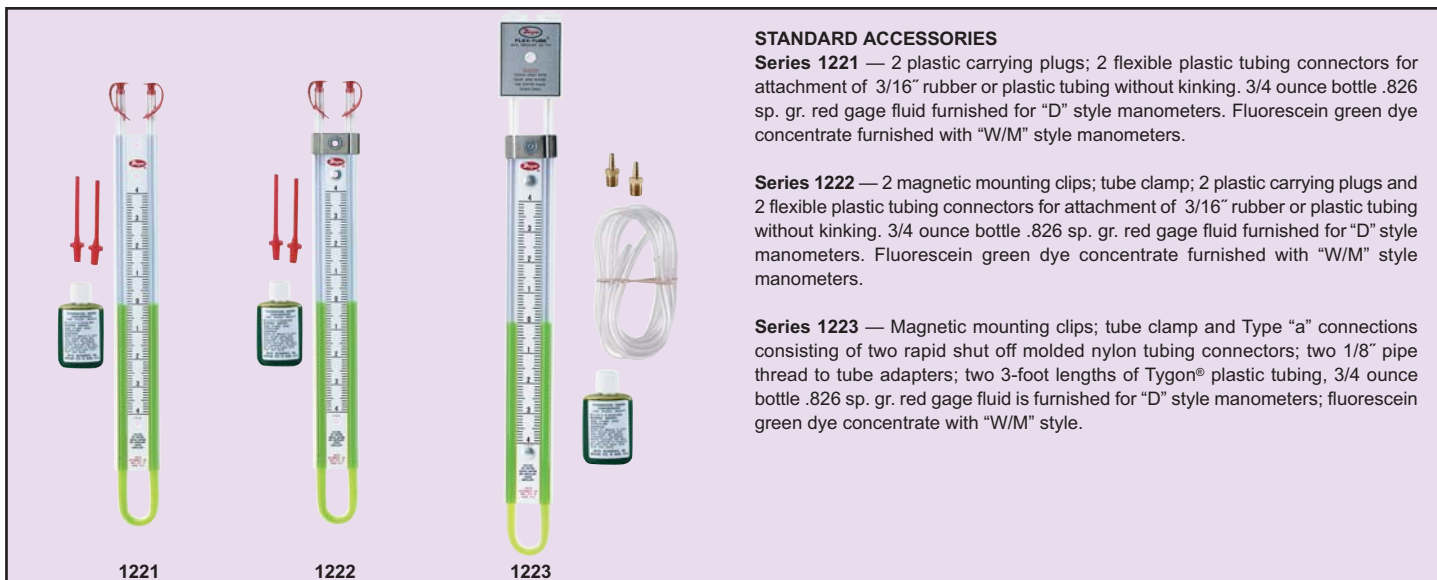7-1/2″H x 3″W x 2-1/4″D (191 x 76 x 57 mm)

STANDARD ACCESSORIES

Series 1221 — 2 plastic carrying plugs; 2 flexible plastic tubing connectors for attachment of 3/16˝ rubber or plastic tubing without kinking. 3/4 ounce bottle .826 sp. gr. red gage fluid furnished for "D" style manometers. Fluorescein green dye concentrate furnished with "W/M" style manometers.

Series 1222 — 2 magnetic mounting clips; tube clamp; 2 plastic carrying plugs and 2 flexible plastic tubing connectors for attachment of 3/16˝ rubber or plastic tubing without kinking. 3/4 ounce bottle .826 sp. gr. red gage fluid furnished for "D" style manometers. Fluorescein green dye concentrate furnished with "W/M" style manometers.

Series 1223 — Magnetic mounting clips; tube clamp and Type "a" connections consisting of two rapid shut off molded nylon tubing connectors; two 1/8˝ pipe thread to tube adapters; two 3-foot lengths of Tygon® plastic tubing, 3/4 ounce bottle .826 sp. gr. red gage fluid is furnished for "D" style manometers; fluorescein green dye concentrate with "W/M" style.

1221 **1222** **1223**

Range		Hg Required to Fill		1221, 2 & 3 Scale Length "A"		1221 & 2 O.A. Length "B"						1223 O.A. Length "B"		2-1/6 [52.39]	1-1/8 [28.58]
Inches H₂O	Millimeters H₂O	Grams	Ounces	W/M	D	W/M	D					W/M	D		
8 (4-0-4)	M200 (100-0-100)	178.5	6.3	12-1/4	14	15-1/4	17					18-1/2	19-7/8		
12 (6-0-6)	M300 (150-0-150)	225.5	7.9	16-1/4	18-7/8	19-1/4	21-3/4					21-1/8	24-5/8		
16 (8-0-8)	M400 (200-0-200)	269	9.5	20-3/8	23-5/8	23-1/4	26-1/2					26-1/8	30-3/8		
20 (10-0-10)		314.5	11.1	24-1/4	28-1/2	27-1/4	31-1/2					30-1/8	34-3/8		
	M600 (300-0-300)	353.1	12.4	27-7/8	32-7/8	30-3/4	35-3/4					33-5/8	38-5/8		
24 (12-0-12)		379.7	13.4	28-1/4	33-3/8	31-1/2	36-1/4					33-3/8	39-1/8		
36 (18-0-18)		491.1	17.3	40-1/4	47-7/8	43-1/4	50-3/4	1-3/4 [44.45]		3/4 [19.05]		46-1/8	53-5/8		
	M1000 (500-500)	526.6	18.5	43-5/8	52	46-1/2	55					49-3/8	57-7/8		

Not recommended for vacuum service above 5 in. Hg (68 in w.c.).
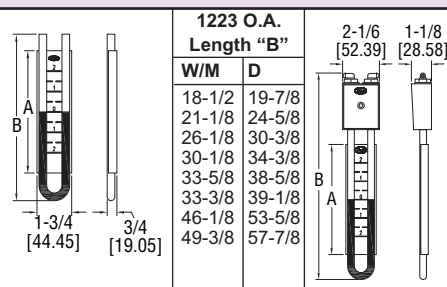
These inexpensive manometers measure positive, negative and differential pressures. Dwyer® Flex-Tube® U-Tube Manometers combine the inherent accuracy of the simple "U" Tube with the durability of tough, long-lasting plastic construction. Columns are of .375˝ O.D. flexible and shatter proof clear butyrate tubing. They are easily accessible for cleaning. Indicating tube is backed by white scale channel to provide maximum color contrast. Scales are extruded high impact polystyrene plastic, formed to hold columns in perfect alignment. Stark white scales have graduations and numbers silkscreen-printed in black for maximum legibility.

You can choose from numerous models and features including over-pressure safety traps, in full scale ranges from 8˝ to 36˝ of water or mercury. All are suitable for total pressures to 100 psi — for determining velocity and static pressures, leakage, fan and blower efficiency, filter resistance, and gas pressures. Ideal wherever a portable, direct reading manometer is needed. Standard ranges and markings as shown, or special ranges, colors, logos and brand names for OEM quantity orders are available.

Minor Divisions of 1/10 inch water column (or 2 mm water column on metric units) are silkscreened in jet black on stark white scale for positive definition. Easy to read, even at a distance, they are acrylic coated for permanence. All models are furnished with one 3/4 ounce bottle of fluorescein green color concentrate with special wetting agent for W/M models, or 3/4 ounce bottle of red gage fluid for "D" units.

Series 1221 Manometer, Our simplest, lowest cost basic U-gage. A dependable U-tube manometer that withstands hard use and provides accurate, high visibility readings. For use with water, mercury or red gage fluid. For mercury filled manometers, a scale clamp bar, Dwyer® Part No. A-363 (available as an extra for Series 1221 — and standard on Series 1222) is recommended. One pair of carrying plugs and a pair of non-kink vinyl tube connectors are included with each manometer.

Series 1222 Manometer, All the features of the 1221 plus magnetic clips for mounting to any vertical steel surface, and clamp bar to insure against U-tube slipping. (Especially recommended for manometers used with mercury.) Both magnets are easily removed and replaced at the user's convenience.
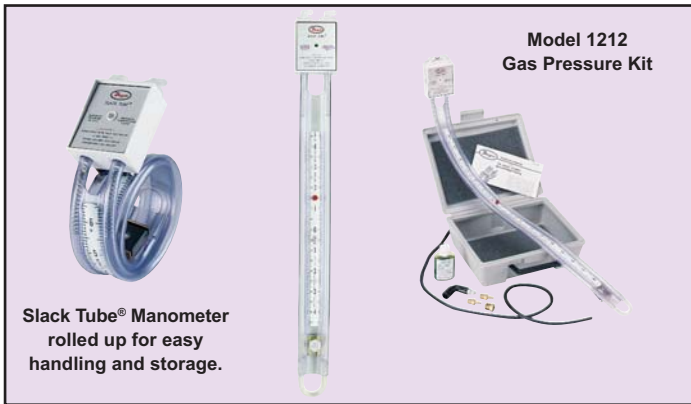
Series 1223 Manometer, Our finest U-gage — for either portable or stationary use. Safety traps prevent loss of indicating fluid in case of accidental over-pressure. Tubing is permanently bonded to a molded, high impact acrylic plastic top that contains safety traps. Large magnetic clips and clamp bar are provided. Standard type "a" connections include two rapid shut-off type molded nylon tubing connections, two 3-foot lengths of flexible Tygon® plastic tubing, and two 1/8˝ pipe thread to tube adapters.

1221 Model	1222 Model	1223 Model	Ranges
1221-8-W/M	1222-8-W/M	1223-8-W/M	8 (4-0-4) in w.c.
1221-12-W/M	1222-12-W/M	1223-12-W/M	12 (6-0-6) in w.c.
1221-16-W/M	1222-16-W/M	1223-16-W/M	16 (8-0-8) in w.c.
1221-20-W/M	1222-20-W/M	1223-20-W/M	20 (10-0-10) in w.c.
1221-24-W/M	1222-24-W/M	1223-24-W/M	24 (12-0-12) in w.c.
1221-36-W/M	1222-36-W/M	1223-36-W/M	36 (18-0-18) in w.c.
1221-M200-W/M	1222-M200-W/M	1223-M200-W/M	M200 (100-0-100) mm w.c.
1221-M300-W/M	1222-M300-W/M	1223-M300-W/M	M300 (150-0-150) mm w.c.
1221-M400-W/M	1222-M400-W/M	1223-M400-W/M	M400 (200-0-200) mm w.c.
1221-M600-W/M	1222-M600-W/M	1223-M600-W/M	M600 (300-0-300) mm w.c.
1221-M1000-W/M	1222-M1000-W/M	1223-M1000-W/M	M1000 (500-0-500) mm w.c.

Note: To order models with red gage fluid change -W/M to -D.

Tygon® is a registered trademark of Saint-Gobain Performance Corporation

Model 1212 Gas Pressure Kit

Slack Tube® Manometer rolled up for easy handling and storage.

The Handy Roll-Up Manometer With Laboratory Accuracy

Dwyer® Slack Tube® Manometers are as accurate as the finest laboratory "U" gages — yet they are made to roll up compactly for easy carrying and to withstand rough usage.

Simply unroll the Dwyer® Slack-Tube® Manometer and set up to read static pressure, vacuum, or differential pressure. Magnetic clips hold it firmly to any steel surface or hang it on a nail. Turn connectors one revolution to open. When the pressure is imposed, add the number of inches one column travels up to the number of inches the other column travels down. When reading is completed turn connectors to seal columns, roll up manometer into compact coil and tuck it away in its plastic case or a tool box. No fluid lost. No loose caps or inserts to lose. Dwyer® Slack Tube® Manometers cover a wide range of pressure readings — from 4-0-4 inches up to 60-0-60 inches. Use them in determining velocity and static pressures, for leakage, fan and blower tests, calibrating control devices, checking gas pressure and many other applications. All models have flexible vinyl-plastic columns and flexible spring steel scale calibrated in inches of water using water, and inches of mercury using mercury. Scale is center-mounted between columns to eliminate parallax error and has a full 2-inch sliding zero adjustment.

Slack Tube® Manometers are suitable for intermittent total pressure to 50 psi and vacuum not exceeding 20˝ Hg. Avoid temperatures above 130°F and continuous high total pressure. Not for use with red gage oil; use only water or mercury.

1212 Gas Pressure Kit For Servicing Gas Appliances

A handy, complete kit containing a 16" Slack Tube® Manometer, necessary tubing and connection fittings for checking gas pressures in virtually all gas appliances such as water heaters, furnaces, stoves and dryers. Different range manometers may be specified at corresponding prices. Compared to the cost of purchasing items separately the assembly of component parts into kit form represents substantial savings.

What the kit consists of:
- 1 – #1211-16 Slack Tube® Manometer, reads pressure to 16˝ water.*
- 1 – Carrying case, plastic, 8-1/2˝ x 7˝ x 3-1/8˝
- 1 – 3/4 oz. bottle Fluorescein green color concentrate with wetting agent
- 2 – 1/8˝ pipe thread rubber tubing adapters
- 1 – 1/8˝ to 1/4˝ pipe thread bushing
- 1 – 3 ft. length 3/16˝ rubber tubing
- 1 – Rubber tubing adapter to fit standard 7/16˝ dia. spud.

*Other ranges available.

Model 1212, Gas Pressure Kit

Model	Range, In.	Hg Req'd (oz)
1211-8	4-0-4	6
1211-12	6-0-6	7
1211-16	8-0-8	9
1211-24	12-0-12	12-1/2
1211-30	15-0-15	15
1211-36	18-0-18	17-1/2
1211-48	24-0-24	22-1/2
1211-60	30-0-30	27
1211-72	36-0-36	32
1211-120	60-0-60	57
Metric	**Range, CM**	**Hg Req'd (oz)**
1211-50	25-0-25	11
1211-100	50-0-50	18-1/2
1211-200	100-0-100	35

STANDARD ACCESSORIES

Plastic case, magnetic mounting clips, two rapid shutoff type molded nylon rubber tubing connectors and one bottle of fluorescein green color concentrate with wetting agent.

Use Series 1227 as a regular U-tube manometer to read high-range pressure on the right leg (shown to the right), or as an inclined manometer (shown below) to read low-range pressure on the bottom leg. Simply incline manometer until fluid levels read zero. No spirit level required. Magnetic clips hold the gage in position on a steel duct surface.

Series 1227 Manometer,

Most versatile and useful low cost manometer we know of. Designed for installation and servicemen. A sturdy, clear plastic manometer, it offers single, direct readings in two ranges: As a U-tube, it reads from 0 to 16˝ of water; as an inclined gage, it reads from -.20 to 0 to 2.6˝ of water. Model 1227M (Metric) is 0 – 400mm water column as a U-tube and -5 to 0 to 70mm water column as an inclined gage. "How-to-use" instructions are printed directly on the scale.

Indicating Tube - Clear .400˝ O.D., tough, shatterproof butyrate. Pressure connection end is bent to provide over pressure protection when used as an inclined gage. One 4-1/2' x 3/8˝ Tygon® tube included for pressure source connection.

Scale - Stark white high-impact styrene, 21˝ long. Adjustable for precise zeroing.

Markings - 1˝ major, .2˝ minor graduations on high range; .02˝ graduations on low range (50 mm major, 10 mm minor graduations on high range, 10 mm major, 1 mm minor graduations on low range for metric model). Silkscreened in black on stark white for positive definition. Acrylic-coated for permanence.

STANDARD ACCESSORIES

Two plastic carrying plugs with retainers for use when manometer is not in service. Two magnetic clips to hold instrument to metal surface. Flexible red vinyl plastic tubing connectors. Brass terminal tube 1/4˝ diameter x 8˝ long. One terminal tube holder. Brass adapter, 1/8˝ pipe thread to plastic tubing. One 4-1/2-foot length of Tygon® plastic tubing. One 3/4 ounce bottle .826 sp. gr. red gage fluid. Vinyl carrying case.

Model 1227 mounted in incline position.

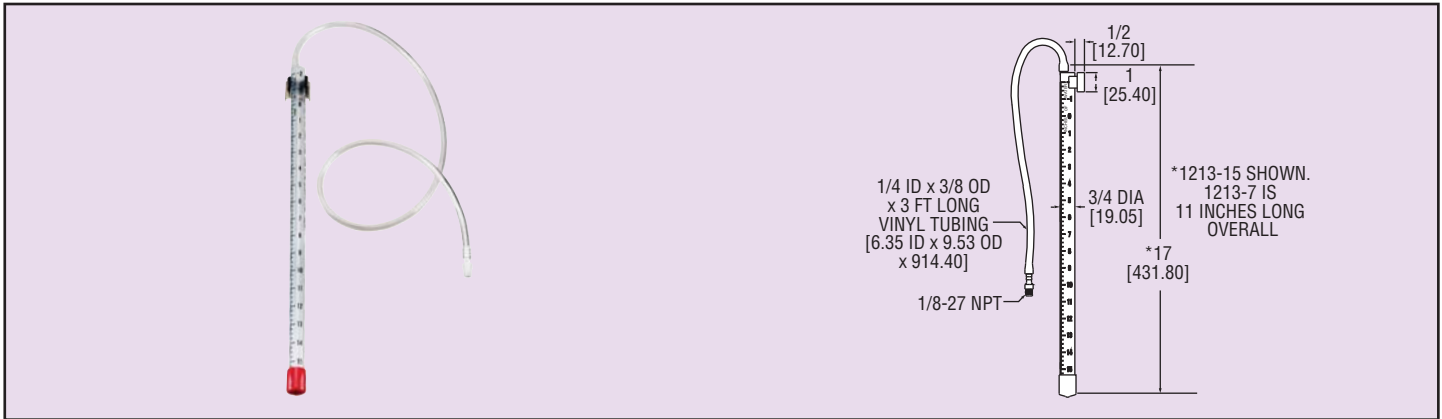| As Vertical U-Tube Manometer	As Inclined Manometer
0-16˝ water with 1˝ major divisions, .2" minor divisions	Scale is 17˝ long, reading .20-0-2.6˝ water with .02" minor divisions
Model 1227M (metric) is 0-400 mm water column	Model 1227M (metric) is -5 to 0 to 70 mm water column
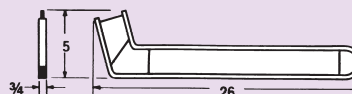
Model 1227 Dual Range

Dwyer®

Series 1213

Gas Pressure Manometer
The "Tube in a Tube" Direct Reading Manometer

1/4 ID x 3/8 OD x 3 FT LONG VINYL TUBING [6.35 ID x 9.53 OD x 914.40]

1/8-27 NPT

1/2 [12.70]

1 [25.40]

3/4 DIA [19.05]

*1213-15 SHOWN. 1213-7 IS 11 INCHES LONG OVERALL

*17 [431.80]

Provide visual indication of pressure with the Series 1213 Gas Pressure Manometer. Designed for use with natural gas, the manometer can also be used to monitor any compatible gases up to 15 inches of water column. Tap water is used as the sensing media and a magnetic clip provides temporary or permanent mounting. Economically priced and made of durable plastic for years of trouble-free service. Includes three feet of vinyl tubing and 1/8″ nylon male NPT to barb fitting.

SPECIFICATIONS
Temperature Limit: 140°F (60°C) maximum.

Model	Length (mm)
1213-7	7″ (177.8)
1213-15	15″ (381)

Pressure Limits: 15 in. w.c. (381 mm).
Piping Connections: 1/8″ male NPT connector provided.
Wetted Materials: Vinyl, PVC and nylon.
Weight: 5 oz (142 g).

Dwyer®

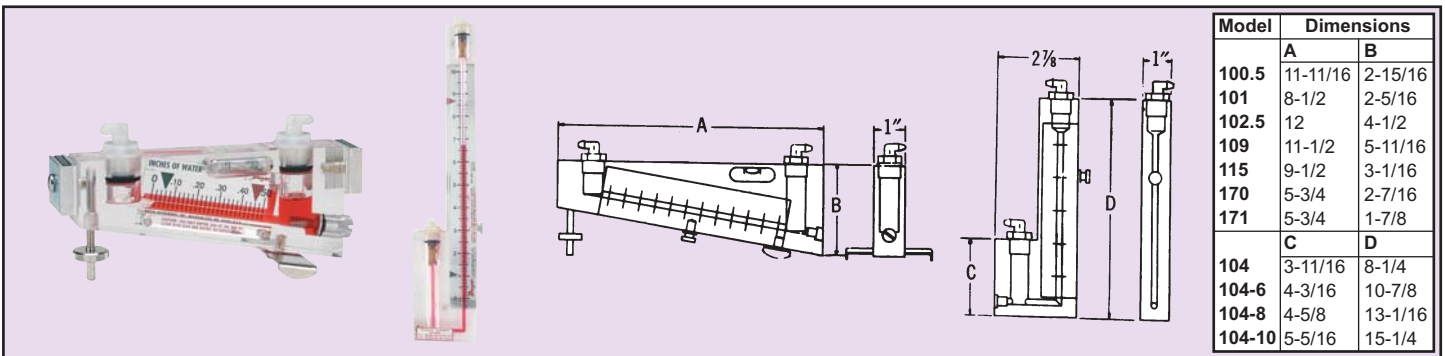**Series 100**

Durablock® Solid Plastic Portable Gages
Suitable for Total Pressures Up to 100 psig, Temperatures Up to 150°F, Accuracy ±2% of Full Scale (1% on Model 115 Only)

2⅞

1″

A

B

C

1″

D

1″

Model	Dimensions	
	A	B
100.5	11-11/16	2-15/16
101	8-1/2	2-5/16
102.5	12	4-1/2
109	11-1/2	5-11/16
115	9-1/2	3-1/16
170	5-3/4	2-7/16
171	5-3/4	1-7/8
	C	D
104	3-11/16	8-1/4
104-6	4-3/16	10-7/8
104-8	4-5/8	13-1/16
104-10	5-5/16	15-1/4

Dwyer® solid plastic portable manometers are precision instruments in inclined and vertical (well-type) styles for the measurement of static pressure, vacuum or differential pressure.

To assure the accuracy required in instruments of this type, all machining of bores and wells is to the highest standards of precision backed by Dwyer's years of experience in the fabrication of acrylic instruments.

STANDARD ACCESSORIES
Plastic or steel carrying case (plastic pouch for 170, 171 and 172), two magnetic mounting clips, two rapid shut-off nylon tubing connections, one 9' length rubber tubing, terminal tube and extra bottle .826 red gage fluid.

Inclined Type						
	Range Inches of Water	Minor Scale Divisions	Scale Length	Carrying Case		Weight lb-oz.
Model				Type	Dimensions	
100.5	.10-0-1.0	.01	8-1/4″	Plastic	13-1/2 x 10 x 2-3/8	5-1
101	.05-0-.50	.01	5″	Plastic	12-1/4 x 6-1/4 x 1-3/4	3-5
102.5	.20-0-2.0	.01	8-3/4″	Plastic	13-1/2 x 10 x 2-3/8	5-10
109	.20-0-3.0	.02	8-3/4″	Plastic	13-1/2 x 10 x 2-3/8	6
115	.05-0-.25	.005	6″	Plastic	12-1/4 x 6-1/4 x 1-3/4	3-10
170	0-.50	.02	2-1/2″	Plastic	7 x 9	1-7
171	0-.25	.01	2-1/2″	Plastic	7 x 9	1-6
Vertical Type						
104	0-4	.10	4-1/2″	Plastic	12-1/4 x 6-1/4 x 1-3/4	3-0
104-6	0-6	.10	7-3/4″	Plastic	13-1/2 x 10 x 2-3/8	4-8
104-8	0-8	.10	9″	Metal	18-1/2 x 4-3/8 x 2-1/4	4-12
104-10	0-10	.10	11-1/8″	Metal	18-1/2 x 4-3/8 x 2-1/4	4-15

Note: Model 100.5 replaces model 100. Model 102.5 replaces model 102.

100.5, solid plastic portable gage with .10-0-1.0″ w.c. range. Shown with carrying case and standard accessories.

104, solid plastic portable vertical manometer shown attached to inside of carrying case cover. Gage may also be removed from case and used in standing position or attached to any vertical steel surface with magnetic clips provided.
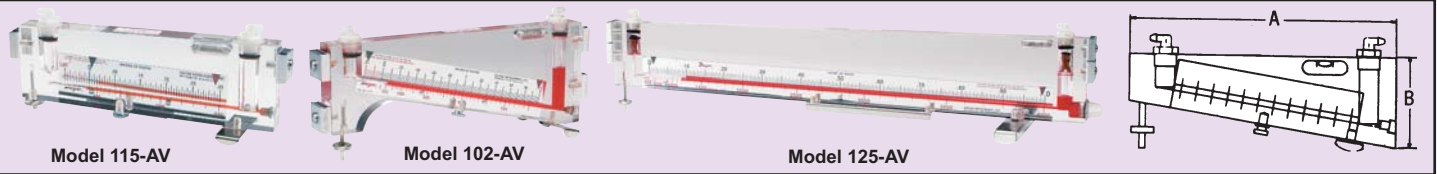
Series 100 AV
Durablock® Air Velocity Gage Kits
Suitable for Total Pressures to 100 psig (6.89 bar), Temperatures to 150°F (65.6°C)

Model 115-AV

Model 102-AV

Model 125-AV

Designed to measure air velocity, static pressure, vacuum or differential pressure, where the additional range of the 400 Series gages is not required. Series 100 Gages offer superb accuracy combined with portability. In Dwyer's® Durablock® precision machined solid acrylic plastic construction, the wells and inclined bore are machined to tolerances of ±.0002″.

Design and service features:

Plastic Body — A 1″ thick solid acrylic block, virtually unbreakable. It is stable and free of the danger of distortion.

Drilled Bore — Permanently free of bends — never requires recalibration due to distortion.

Reflective Chrome Finish Scales — Easily eliminate parallax errors in reading. Adjustable, with thumbscrew locking for easy zeroing. (Model 125 AV uses screw plunger to adjust zero setting).

Red Gage Fluid — .826 specific gravity. Forms a well-shaped, easy-to-read meniscus — the result of high wetability.

Leveling Adjustment — Screw allows quick, accurate leveling. Integral ground glass bubble level provides ready reference.

Model	Range, Inches of Water	Velocity, Feet per Minute	Minor Scale Divisions	Scale Length	Dimensions, In Inches		Pitot Tube Model–Length	
					A	B		
102-AV	.20-0-2.0	400-5500	.02	8-1/4 in	11-1/2	4-5/16	166-12	12 in.
115-AV	.05-0-.25	400-2000	.005	6 in	9-1/2	3-1/16	166-12	12 in.
115T-AV	.05-0-.25	400-2000	.005	6 in	9-1/2	3-1/16	166T	36 in.
125-AV	0-1.0	300-4000	.005	20 in	23-3/4	4	160-24	24 in.

Model	Carrying Case Dimensions
102-AV	13-1/2 X10 X 2-1/2
115-AV	13-1/2 X10 X 2-1/2
115T-AV	13-1/2 X10 X 2-1/2
125-AV	9 X 26 X 1-5/8

Complete Air Velocity Kits include:
Dwyer® Inclined Manometer described above, stainless steel Pitot tube (12″ with Models 102-AV & 115-AV, 24″ with Model 125-AV and telescoping 36″ with Model 115T-AV), two 9′ lengths of rubber tubing with connectors, extra red gage fluid, instruction card H-7, Bulletin H-11, magnetic mounting clips, air velocity calculator slide rule and carrying case (plastic with models 102-AV, 115-AV and 115T-AV, steel with model 125-AV).

Series Mark II
Molded Plastic Air Velocity Meters
Low in Cost — Direct Reading Scales Offer 3% Accuracy — For Portable or Stationary Applications

Model 27

Model 40-AV – Shown with standard swing-out stand and leveling screw installed.

1-1/4 [31.75]
1-7/16 [35.53]
3-11/16 [93.66]
Ø7/32 [5.56] HOLE
5/8 [15.88]
4-25/32 [121.44]
25/32 [19.84]
5-29/32 [150.02]
4-23/32 [119.86]
1-1/8 [28.58]
2-1/4 [57.15] MAX
25/32 [19.84]
7-13/32 [188.12]
7/32 X 13/32 [5.56 X 10.32] MOUNTING SLOT

Ø15/64 [5.95] MOUNTING HOLE
5-5/16 [134.95] MAX
2-31/32 [75.41]
4-5/8 [117.48]
15/64 [5.95] x 13/32 [10.32] MOUNTING SLOT
25/32 [19.84]
2-1/4 [57.15] MAX
1-1/4 [31.75]
4 [101.60]
10-5/8 [269.88]

Construction and installation features:
Construction is simple with virtually indestructible molded white styrene-acrylonitrile housing, indicating tube and fluid wells, molded ABS knobs and zero adjust plunger, shock mounted glass level vial and leak proof "O"ring seals. Scales are lithograph printed on aluminum and epoxy coated.
For stationary applications, the Mark II air velocity meters can be easily mounted on any vertical surface with the two screws provided. A built in spirit level simplifies leveling. Just fill the reservoir, adjust fluid level to zero, connect the pitot tube, and it is ready for operation. For portable applications, the Model A-612 portable stand is available for Models 27 and 28.
A molded plastic swing-out stand and leveling screw for user installation are provided with Models 40-1-AV and 41-2-AV which also feature rapid shutoff tubing connectors and built-in over pressure traps.
Additional standard accessories include plastic connection tubing, mounting screws, 3/4 oz. bottle of indicating fluid and instructions. Metric ranges are also available.

Model	Range
Mark II 27	0-7,000 fpm
Mark II 28	0-10,500 fpm
Mark II 40-1-AV	0-4,200 fpm
Mark II 41-2-AV	0-6,300 fpm
Mark II 40-250 Pa-AV	0-21 mps

Pitot tube not included with models above.

ACCESSORY
A-612, Portable Stand (for models 27, 28)

OEM Specials — All models of the Dwyer® Mark II molded plastic air velocity meters can be supplied with your logo or special scale in OEM quantities. Consult factory for details.
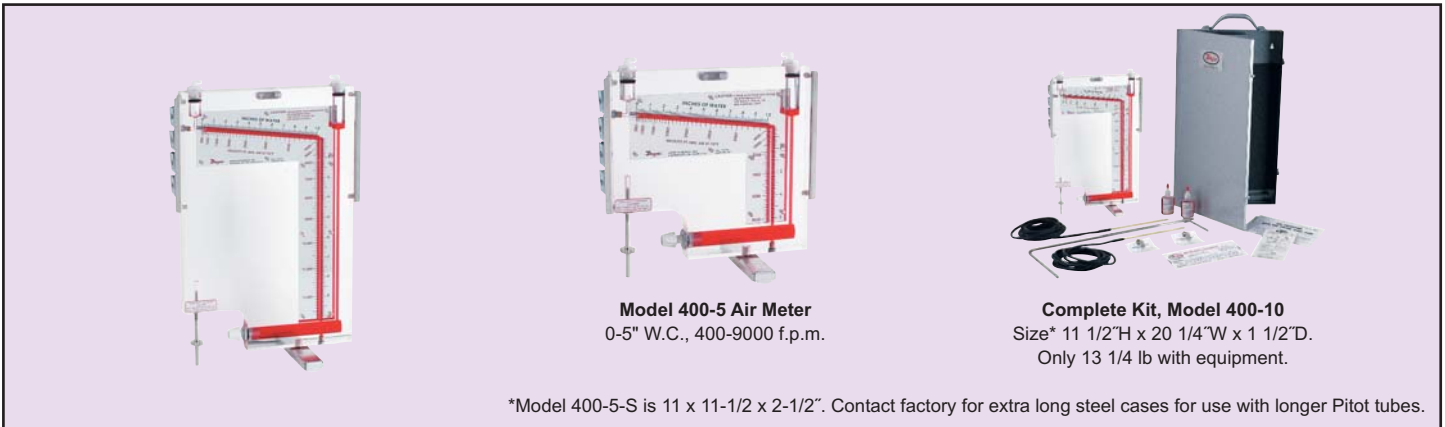**See also our Digital Manometers and Pitot tubes.**

Series 400 **Air Velocity Meters**

Model 400-5 Air Meter
0-5" W.C., 400-9000 f.p.m.

Complete Kit, Model 400-10
Size* 11 1/2″H x 20 1/4″W x 1 1/2″D.
Only 13 1/4 lb with equipment.

*Model 400-5-S is 11 x 11-1/2 x 2-1/2″. Contact factory for extra long steel cases for use with longer Pitot tubes.

Measure both pressure and air velocity
Read the red figures directly in feet per minute of velocity — from 400 to 10,000 f.p.m. No conversion tables needed for air at standard conditions. Read the black figures in inches of water column air pressure — from 0 to 10" w.c.

Our most popular precision air velocity instrument, the Series 400 is used to balance air conditioning systems, measure pressure drop across filters, and test fan and blower discharge and inlet pressures, as well as air velocity in ducts. It offers the convenience of a dual purpose instrument — plus high accuracy on easy-to-read scales. The Series 400 includes leveling adjustment and glass bubble level, which makes it a versatile all around manometer for the air conditioning and balancing contractor or industrial plant.

Series 400 Air Velocity Meters with Combination Inclined/Vertical Scales
Rated for total pressures to 100 psig (6.89 bar); temperatures to 150°F (65°C)

Model	Range in w.c.	Velocity FPM	Minor Div.; Range, in w.c.		Pitot Tube
			Inclined Scale	Vertical Scale	
400-5-S-Kit	0-5	400-9000	.01, 0-1.0	.10, 1-5	8 in
400-5-L-Kit	0-5	400-9000	.01, 0-1.0	.10, 1-5	18 in
400-5-Gage	0-5	400-9000	.01, 0-1.0	.10, 1-5	none
400-10-Kit	0-10	400-12,600	.01, 0-1.0	.10, 1-10	18 in
400-10-Gage	0-10	400-12,600	.01, 0-1.0	.10, 1-10	none
400-23-Kit	0-23	400-19,200	.02, 0-2.3	.20, 2.3-23	18 in
400-23-Gage	0-23	400-19,200	.02, 0-2.3	.20, 2.3-23	none

Dwyer®

Model 460 **Air Meter**
A Low-Cost, Direct Reading Instrument Used for Both Air Velocity & Static Pressure Tests

1-11/16
[42.88]

6
[152.40]

7/16
[11.11]

5/16
[7.95]

1-1/8
[28.72]

Simple and quick, the 460 Air Meter is popular for servicing air conditioning, heating and ventilating equipment. Direct reading velocity and static pressure scales — both low and high ranges — show supply and return grille velocities, furnace draft, pressure drop across filters, etc. The 460 gives consistent, accurate results with no tedious calibration. Rugged plastic for rough daily use. Dual velocity ranges read 260-1200 and 1000-4000 fpm; pressure ranges from .005-.09 and .05 -1.0 inches w.c.

Model 460, Air Meter, complete kit

ACCESSORIES
A-378, Tube of 3 replacement floats
A-379, Supply grill probe
A-380, Return grill probe
A-381, Cleaning kit including 1 anti-static chemically treated pipe stem cleaner and nylon high range orifice cleaner

A Complete Pocket-Size Kit
Includes air meter, return and supply grille probes, angle connector, cleaning materials, instruction card, air velocity calculator and carrying case.

Furnace draft (left)

Grille velocities (right)

Model 475-1-FM-AV

Convenient all-in-one kit is small, light and easy to use. No set-up or leveling needed. Digital manometer reads from 0-19.99 in. w.c. with ±0.5% F.S. accuracy and minor divisions to 0.01. Large 1/2″ LCD readout is easy to see in poorly lighted areas and has "low battery" warning. Included is a 6" stainless steel Pitot tube with integral compression fitting to hold it securely when taking readings. Also, two static pressure tips with magnetic mounting measure pressure drop across filters, condenser coils, etc. Kit comes complete with rubber tubing, 9V battery, step drill, AV calculator slide rule, and custom fitted carrying case. An indispensable test kit for the plant engineer, and HVAC technician that must balance system air flows at start-up.

Model 475-1-FM-AV, Air Velocity Kit

Complete Kit Includes:
• Model 475-1 Digital Manometer, range 0-19.99 in. w.c.
• Model 166-6-CF, 6″ Pitot Tube with Compression Fitting
• Two No. A-303 Static Pressure Tips with Magnetic Mounting
• Two 9 Ft. Lengths 3/16″ I.D. Rubber Tubing
• No. A-397 Step Drill for 3/16″-1/2″ Holes in 1/16″ Increments
• No. A-532 AV Slide Chart
• 9 Volt Battery
• Fitted Polyethylene Case

Model 475-1T-FM-AV

Convenient all-in-one kit is small, light and easy to use. No set-up or leveling needed. Digital manometer reads from 0-19.99 in. w.c. with ±0.5% F.S. accuracy and minor divisions to 0.01. Large 1/2″ LCD readout is easy to see in poorly lighted areas and has "low battery" warning. Kit includes convenient telescoping Pitot tube, Model 166T, fully adjustable from 11.5 to 36 inches (29.2 to 91.4 cm). Also, two static pressure tips with magnetic mounting measure pressure drop across filters, condenser coils, etc. Kit comes complete with rubber tubing, 9V battery, step drill, AV calculator slide rule, and custom fitted carrying case. An indispensable test kit for the plant engineer, and HVAC technician that must balance system air flows at start-up.

Model 475-1T-FM-AV, Air Velocity Kit

Complete Kit Includes:
• Model 475-1 Digital Manometer, range 0-19.99 in. w.c.
• Model 166T, 36″ Telescoping Stainless Steel Pitot Tube
• Two No. A-303 Static Pressure Tips with Magnetic Mounting
• Two 4 1/2 Ft. Lengths 3/16″ I.D. Rubber Tubing
• No. A-397 Step Drill for 3/16″-1/2″ Holes in 1/16″ Increments
• No. A-532 AV Slide Chart
• 9 Volt Battery
• Fitted Polyethylene Case

Model 477-1T-FM-AV

Convenient all-in-one kit is small, light and easy to use. No set-up or leveling needed. Digital manometer reads from 0-20 in. w.c. with ±0.5% F.S. accuracy. The Series 477 stores up to 20 readings in memory for later reference, instantly selecting up to nine English/Metric pressure units that are visible on a large, backlit 0.4″ LCD readout. Both audible and visual overpressure alarms and a "low battery" warning are standard features.

Each kit includes convenient telescoping Pitot tube, Model 166T which is fully adjustable from 11.5 to 36 inches (29.2 to 91.4 cm). In addition, two static pressure tips with magnetic mountings measure pressure drop across filters, condenser coils, etc.

Kit comes complete with rubber tubing, 9V battery, step drill, AV calculator slide rule, and custom fitted carrying case. An indispensable test kit for the plant engineer, and HVAC technician that must balance system air flows at start-up.

Complete Kit Includes:
• Model 477-1 Digital Manometer, range 0-20 in. w.c.
• Model 166T, 36″ Telescoping Stainless Steel Pitot Tube
• Two No. A-303 Static Pressure Tips with Magnetic Mounting
• Two 4 1/2 Ft. Lengths 3/16″ I.D. Rubber Tubing
• No. A-397 Step Drill for 3/16″ - 1/2″ Holes in 1/16″ Increments
• No. A-532 AV Slide Chart
• 9 Volt Battery
• Fitted Polyethylene Case

Model 477-1T-FM-AV, Air Velocity Kit

TEST EQUIPMENT

Manometers, Air Velocity

Dwyer ®

Model AFH2

Air Flow Hood

Measures Volumetric Flow Rate with Highly Accurate Digital Manometer

CE

24 SQ. [609.60]

38 [965.20]

MOUNTING PLATE

8 [203.20]

18-1/2 [469.90]

HOOD FRAME ASSEMBLY
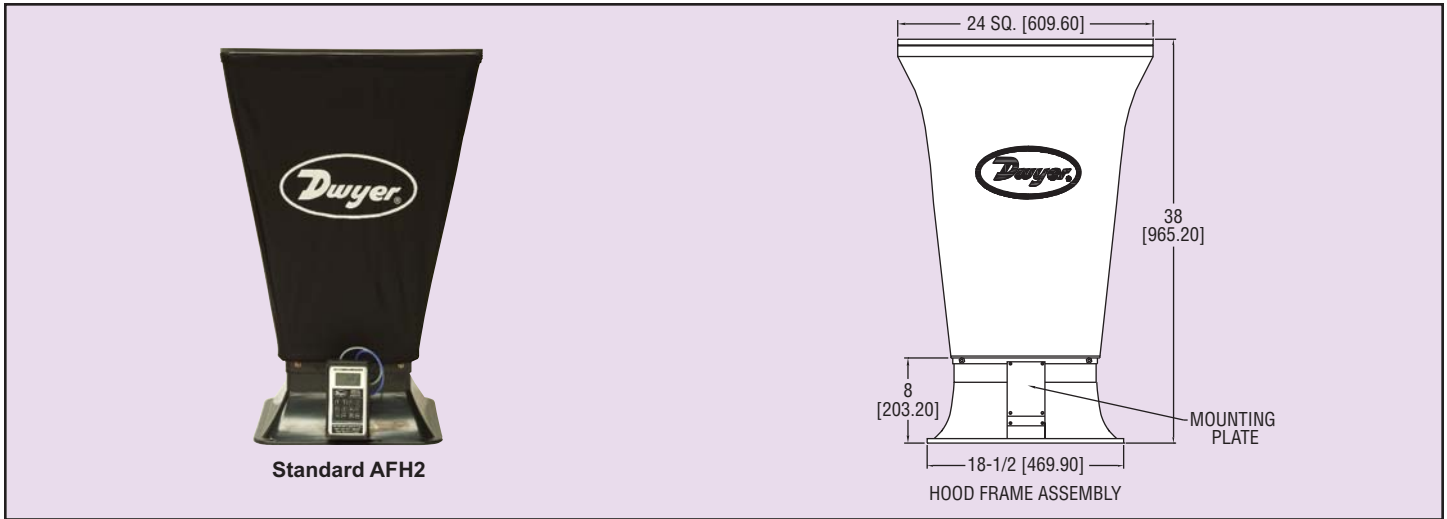
Standard AFH2

The Model AFH2 Air Flow Hood is designed to measure volumetric air flow from diffusers, grilles and registers. The AFH2 Air Flow Hood maintains a running average of measurements in the desired units, and provides the ability to manually record measurements with the manometer over a given time period. The highly accurate digital manometer has an auto-zero feature and will auto-zero at user-defined intervals. The digital manometer easily mounts to the flow hood with its magnet back-plate. Break down is very quick and easy as tools are not required. In addition to these features, the unit will alert you when its battery is running low in order to avoid recording inaccurate measurements. This lightweight flow hood is durable and easily stores into an included travel case. New low flow adapter kit allows easy conversion of any AFH2 into a low flow hood. All kits fit easily into the AFH2's travel case.

Model AFH2, Air Flow Hood with 2´x2´ hood with low flow kit

ACCESSORIES
A-174, Low Flow Hood Adapter Kit
A-175, Hood Adapter Kit.
Required for use with all alternative hoods
A-176, 1´x4´ canvas hood
A-177, 2´x4´ canvas hood
A-178, 1´x5´ canvas hood
A-179, 3´x3´ canvas hood
A-190, Software and cable

AFH2 with A-174 Low Flow Adapter

AFH2 Travel Case

SPECIFICATIONS
Service: Air.
Volume Flow Rate Units: CFM, l/s, m³/hr.
Volume Flow Ranges:
   Supply: CFM: 41 to 1176; l/s: 19 to 555; m³/hr: 69 to 2000;
   Exhaust: CFM: 45 to 1176; l/s: 21 to 555; m³/hr: 76 to 2000.
Volume Flow Ranges with Low Flow Kit:
   Supply: CFM: 25 to 1176; l/s: 12 to 555; m³/hr: 43 to 2000;
   Exhaust: CFM: 29 to 1176; l/s: 14 to 555; m³/hr: 49 to 2000.
Accuracy @ 20°C (68°F):
   Supply: ±3% of reading ±9 CFM (±4 l/s, 14 m³/hr);
   Exhaust: ±3% of reading ±9 CFM (±4 l/s, 14 m³/hr).
Span Stability v. Temperature: Better than 0.1% of range in use per 2°F (1°C).
Zero System Accuracy: ±1 count (±0.05 Pascal typical; ±0.0002 in w.c.).
Temperature Limits:
   Operating: 32 to 122°F (0 to 50°C);
   Storage: 23 to 122°F (-5 to 50°C).
Thermal Effect: ±0.1% of range in use per 2°F (1°C).
Zero Drift: Negligible due to auto zero system. When auto zero set at 30 second intervals (2 minute warm up).
Orientation Effect: Any 45 degree change 0.0004 in w.c. (0.1 pascal) typical.
System Air Leak: 0.366 in³/hr (0.1 ml/min) @ 20 in w.c. (5 kPa) typical.
Maximum Differential Pressure: 60 in w.c. (15 kPa).
Auto Ranging Display: 0.375˝ high digits.
Resolution: 1 CFM, 1 l/s, 1 m³/hr.
Output: RS-232 serial interface (baud rate 9600).
Memory Capability: 2500 readings in any engineering unit.
Power: Rechargeable 8.4 V 120 mAh (optional 9V may be used in place of rechargeable).
Dimensions: 30˝ x 24˝ x 24˝ (965 x 610 x 610 mm). Hood only: 2´ x 2´ (600 mm x 600 mm).
Weight: 8.8 lb (4 kg).
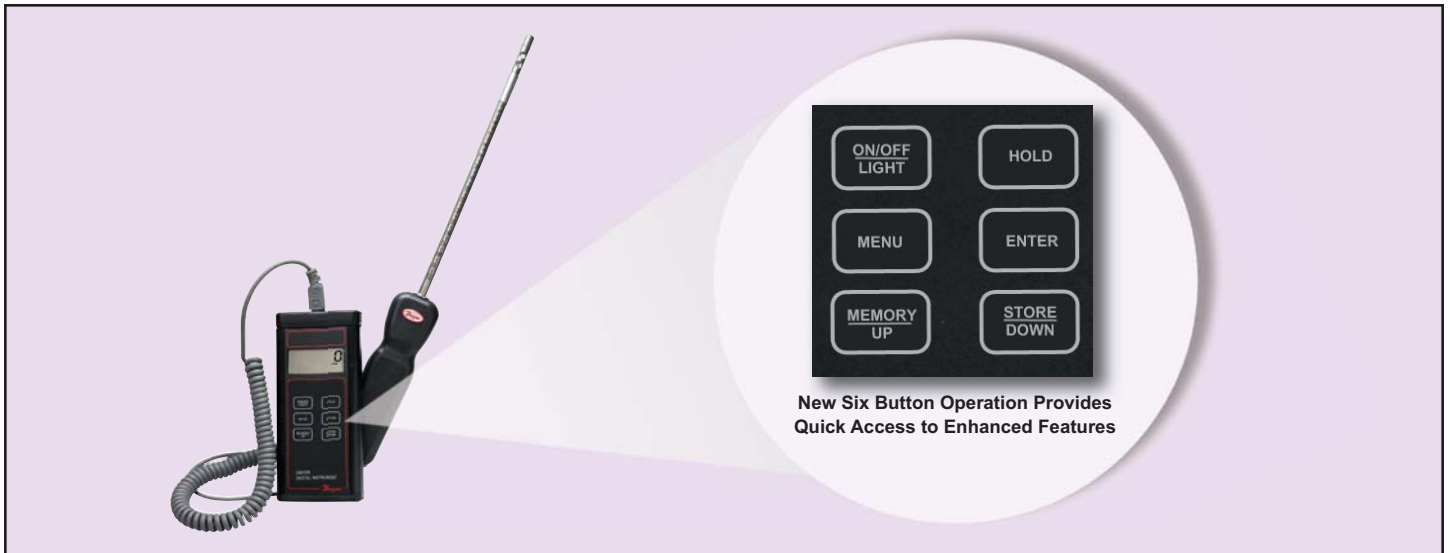**Agency Approval:** CE.

Dwyer®

Model 471B

Thermo-Anemometer Test Instrument
Measures Air Velocity or Air Volume and Temperature Simultaneously

CE RoHS

New Six Button Operation Provides Quick Access to Enhanced Features

The Model 471B Digital Thermo Anemometers are versatile dual function instruments that quickly and easily measure air velocity or volumetric flow plus air temperature in imperial or metric units. High contrast LCD display shows both selected readings simultaneously. Convenient backlight provides perfect visibility in low light conditions. Light automatically shuts off after 2-1/2 minutes to prolong battery life. Low battery warning is included. Stainless steel probe with comfortable hand grip is etched with insertion depth marks from 0 to 8 inches and 0 to 20 cm. Extruded aluminum housing fully protects electronics, yet is lightweight and comfortable to hold even when taking multiple readings as part of duct traverses. Up to 99 readings may be stored for later retrieval. An integral sliding cover protects sensors when not in use. Items included with the 471B are 9 volt alkaline battery, sensing probe, wrist strap and custom carrying case.

Model 471B-1, Digital Thermo Anemometer includes 9V battery, sensing probe, wrist strap, soft carrying case and instructions

ADDITIONAL PARTS
AP1, Thermo anemometer air velocity & temperature probe with coiled cable
UHH-C1, Soft carrying case

SPECIFICATIONS
Service: Air velocity and temperature of clean, dry air.
Temperature Limits:
  Process: -20 to 200°F (-29 to 93°C);
  Ambient: 5 to 125°F (-15 to 51°C).
Display: 4.5 digit LCD.
Resolution: 0.1%, 0.1 °F/°C.
Range Air Velocity: 0 to 6000 FPM (0 to 30 m/s).
Accuracy Air Velocity: ±3% FS within temperature range of 40 to 90°F (4 to 32°C).
Range Volumetric Air Flow: 19,999 in selected flow units.
Range Temperature: -40 to 212°F (-40 to 100°C).
Accuracy Temperature: ±0.5°F (±0.28°C).
Probe Length: 8″ (203 mm) insertion.
Cable Length: 28″ (71 cm) retracted, 6 ft (183 cm) extended.
Power Requirements: 9V alkaline battery included.
Weight: 16 oz (454 g).
Agency Approvals: CE, RoHS.

Replaceable Probe with Secure 6 Pin Adapter
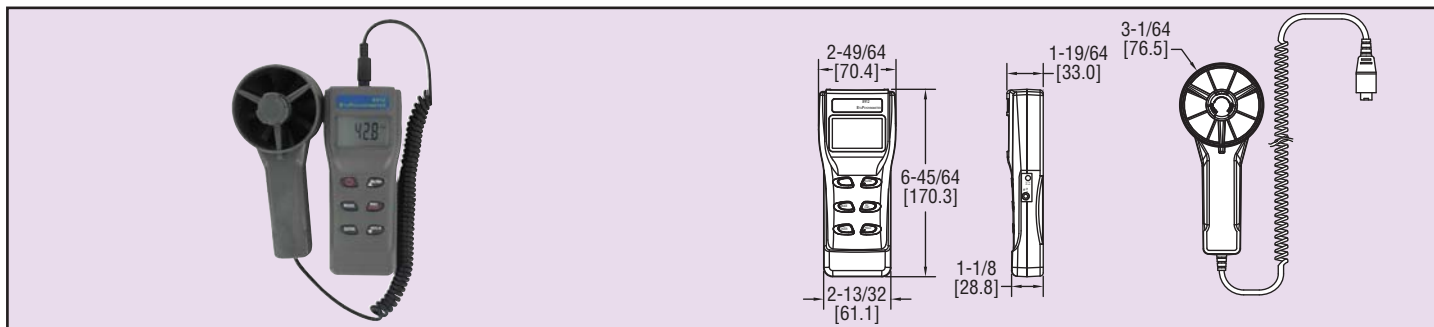

Soft Carrying Case Included with Every Unit

Model 8912 Vane Thermo-Anemometer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Dwyer®

CE

Measure air velocity, air volume, temperature, humidity, and BTU with the Model 8912 Vane Thermo-Anemometer. The large 1.7″ (44 mm) display allows users to easily view readings. User-selectable wind speed units include ft/min, m/s, knots, mph, and km/hr. In addition to these functions, the 8912 is capable of measuring relative humidity, wet bulb temperature, dew point, and BTU capacity. A built-in sensor records ambient temperature in °F or °C. Model 8912 features include data hold, the ability to record minimum, maximum, and average readings on a single point, and an RS-232 interface setting. The Model 8912 also features a detachable probe for easy replacement, if necessary. The units can record and average up to 2 hours of data while displaying the continuous running average. Each unit includes hard carrying case, four AAA batteries, calibration data tag and instruction manual. This versatile meter is perfect for HVAC inspection, energy audits and balancing applications.

Model 8912, Vane Thermo-Anemometer

ACCESSORIES
A-549, Replacement Probe with Vane
A-552, USB Cable and RS-232 Software

SPECIFICATIONS
AIR VELOCITY
Range: 188 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -4 to 140°F (-20 to 60°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.10%.
Response Time: 60 seconds.

AIR VOLUME
Range: 0 to 99999 (CFM or m³/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 (0 to 9999.9) or 1 (10000 to 99999).
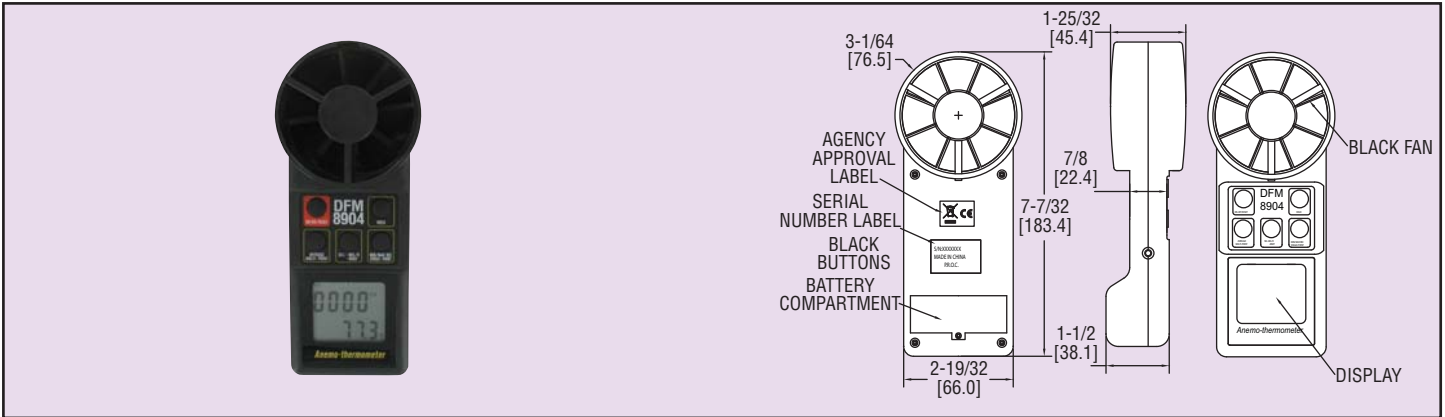**Response Time:** 1 second.

WET BULB
Range: -7.6 to 158°F (-22 to 70°C).
Resolution: 0.1°F/°C.
Display: 1 x 1.8″ (26 x 45 mm).
Serial Communications: 9600 bps, 8 data bits, no parity.
Power Requirements: 4 AAA batteries.
Battery Life: 100 hours.
Vane Diameter: 3″ (77 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Model 9671 Multifunction Vane Thermo-Anemometer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU; Built-In Datalogging

Dwyer®

CE

Measure air velocity, air volume, temperature, humidity, and BTU with the Model 9671 Multifunction Anemometer. The large 1.8″ (45 mm) display allows users to easily view readings. User-selectable wind speed units include ft/min, m/s, knots, mph and km/hr. In addition to these functions, the 9671 is capable of measuring relative humidity, wet bulb temperature, dew point and BTU capacity. A built-in sensor records ambient temperature in °F or °C. Model 9671 features include data hold, along with the ability to record minimum, maximum and average readings on a single point. Additional features include an RS-232 interface setting that allows the unit to download data, as well as upload up to 99 measurements through pre-edited PC files. The 9671 also has a detachable probe for easy replacement, if necessary. Each unit includes hard carrying case, four AAA batteries, software CD, cable and instruction manual.

Model 9671, Vane Thermo-Anemometer

ACCESSORY
A-551, Replacement Probe with Vane

SPECIFICATIONS
AIR VELOCITY
Range: 118 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -4 to 140°F (-20 to 60°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.10%.
Response Time: 60 seconds.

AIR VOLUME
Range: 0 to 99999 (CFM or m³/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 (0 to 9999.9) or 1 (10000 to 99999).
Response Time: 1 second.

WET BULB
Range: -7.6 to 158°F (-22 to 70°C).
Resolution: 0.1°F/°C.
Display: 1 x 1.8″ (26 x 45 mm).
Serial Communications: 9600 bps, 8 data bits, no parity.
Power Requirements: 4 AAA batteries.
Battery Life: 100 hours.
Vane Diameter: 3″ (77 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Model 8904 Integral Vane Thermo-Anemometer
Large 1.3″ Dual Display, One Hand Operation

CE

1-25/32 [45.4]

3-1/64 [76.5]

AGENCY APPROVAL LABEL

SERIAL NUMBER LABEL

BLACK BUTTONS

BATTERY COMPARTMENT

7/8 [22.4]

7-7/32 [183.4]

1-1/2 [38.1]

2-19/32 [66.0]

BLACK FAN

DFM 8904

Anemo-thermometer

DISPLAY

Simultaneously measure air velocity and temperature with the Model 8904 Integral Vane Thermo-Anemometer. The large 1.3″ (34 mm) display allows users to easily view readings. User-selectable wind speed units include ft/min, m/sec, knots, mph and km/hr. Additionally, a built-in sensor records ambient temperature in °F or °C. Model 8904 features include data hold, the ability to record minimum, maximum and average readings on a single point and an RS-232 interface setting. The units can also record and average up to 2 hours of data while displaying the continuous running average. Model 8904 includes hard carrying case, one 9 V battery and instruction manual. This compact meter is ideal for HVAC inspection, energy audits and balancing applications.

APPLICATIONS
This meter is most ideal for measuring heat, ventilation, air conditioning, frigerating wind flow and temperature.

Model 8904, Integral Vane Thermo-Anemometer

ACCESSORY
A-552, USB Cable and RS-232 Software

SPECIFICATIONS
AIR VELOCITY
Range: 80 to 5900 ft/min (0.4 to 30 m/s).
Accuracy: ±3% of reading or last significant digit (whichever is greater).
Resolution: 1 ft/min (0.01 m/s).
Response Time: 1 second.

TEMPERATURE
Range: 14 to 122°F (-10 to 50°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.
Display: 1.3 x 1.6″ (34 x 40 mm).
Serial Communications: 2400 bps, 8 data bits.
Power Requirements: 9 V battery.
Battery Life: 100 hours.
Vane Diameter: 2-7/8″ (70 mm).
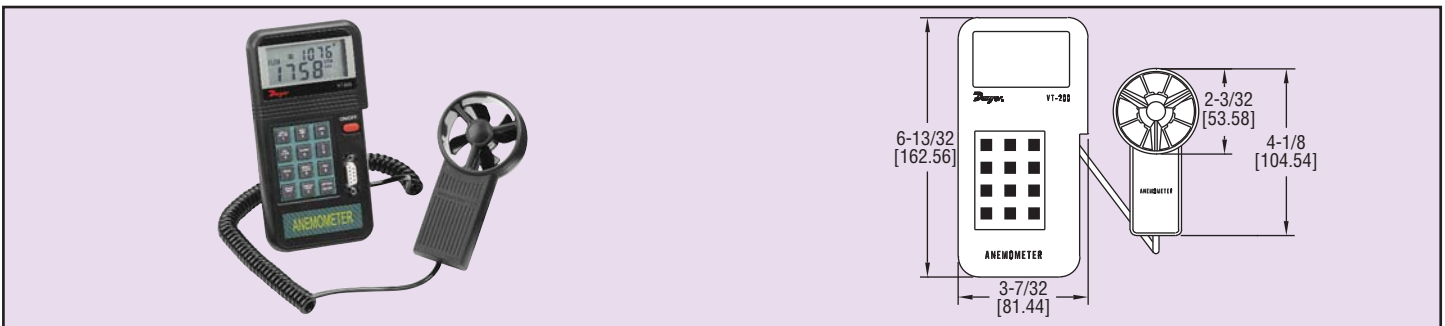**Weight:** 5.3 oz (150 g).
Agency Approvals: CE.

Dwyer®

Model VT-200 Vane Thermo-Anemometer
Measures Air Volume, Air Velocity, and Temperature, Built-in Datalogging

CE

6-13/32 [162.56]

3-7/32 [81.44]

2-3/32 [53.58]

4-1/8 [104.54]

Dwyer VT-200

ANEMOMETER

Model VT-200 Vane Thermo-Anemometer is ideal for balancing air conditioning and heating ducts or checking the operation of fans and blowers. Model VT-200 measures air volume in cubic feet per minute and cubic meters per minute. Air velocity measurements can be viewed in ft/min, m/s, knots, km/hr, and mph with ±3% accuracy. The multifunction LCD can simultaneously display air velocity and temperature in selectable units or air flow and air area. Built-in datalogger can store up to 1000 measurements or transfer the data to a PC via RS-232 communication. Additional features include data hold and record/recall minimum, maximum and average readings. Model VT-200 includes RS-232 interface, PC Windows™ software, cable, 9V battery, carrying case, and instruction manual.

Model VT-200, Vane Thermo-Anemometer

SPECIFICATIONS
Air Velocity Ranges: 0.3 to 45 m/s; 0.7 to 100 mph; 0.6 to 88.0 knots; 1 to 140.0 km/hr; 60 to 8,800 ft/min.
Temperature Range: 32 to 122°F (0 to 50°C).
Air Volume Ranges: CFM (ft³/min) or CMM (m³/min).
Accuracy: Air velocity: ±3% of reading ± 0.1, whichever is greater; Temperature: ±1.5 °F (±0.8°C).
Resolution: 0.1 knots, m/s, km/hr, and mph; 0.1/1 ft/min; 0.1°C.
Temperature Sensor: Type K thermocouple.
Temperature Limits: 32 to 140°F (0 to 60°C).
Display: Dual line, 4-digit, 1.1″ (27.9 mm) height.
Power: 9V alkaline battery (included). Battery life: approx. 50 hours.
Output: RS232 serial interface via DB9 female connector.
Housing: ABS plastic, 1″ (25 mm) diameter.
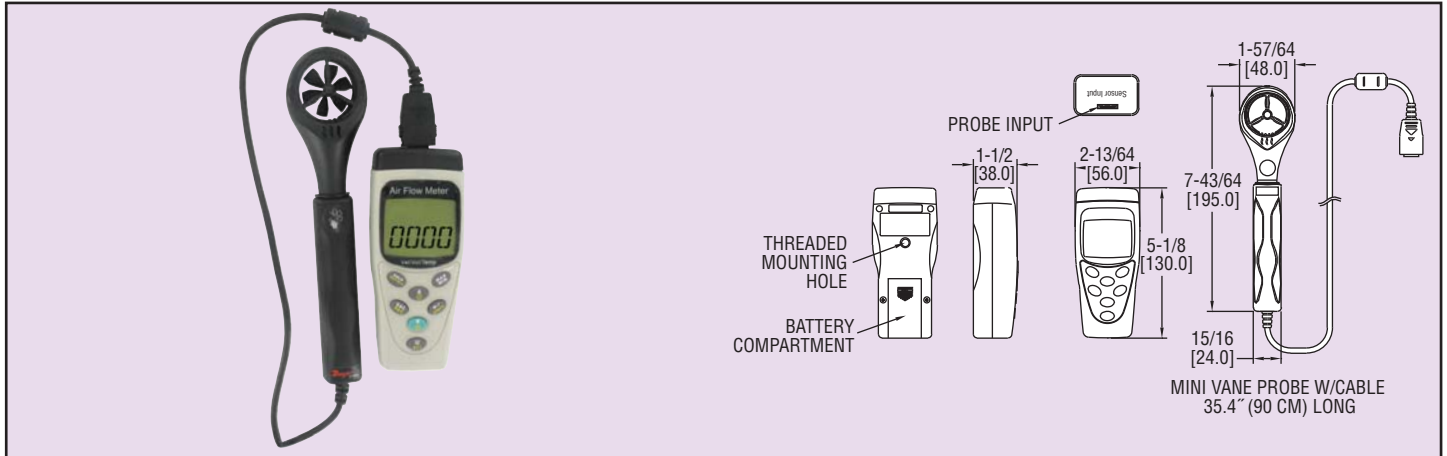**Weight:** 12.3 oz (350 g).
Agency Approval: CE.

Dwyer®

Mini-Vane Thermo-Anemometer

Capable of Measuring Air Volume, Air Velocity, Temperature, Humidity and Barometric Pressure

CE

PROBE INPUT

THREADED MOUNTING HOLE

BATTERY COMPARTMENT

1-1/2 [38.0]

2-13/64 [56.0]

1-57/64 [48.0]

7-43/64 [195.0]

5-1/8 [130.0]

15/16 [24.0]

MINI VANE PROBE W/CABLE 35.4″ (90 CM) LONG

Sensor Input

The Series MVA Mini-Vane Thermo-Anemometer has the ability, depending on the model, to measure air velocity, volume flow, temperature, relative humidity, and barometric pressure. With its 1.18″ diameter (30 mm) vane, the Series MVA is ideal for spot measurements at air outlets. The MVA-02 is capable of detecting air flows up to 4921 ft/min (25 m/s) and temperatures up to 140°F (60°C). The MVA-03 additionally detects humidity from 0 to 100% with high accuracy. The MVA-04 can do all three of the above functions, plus adds the feature of measuring absolute pressure from 10.3 to 32″ Hg (350 to 1100 hPa). The Series MVA anemometers include a wide variety of user selectable units. These units feature a 4-digit LCD display, data hold, ability to record maximum and minimum, storage up to 99 air velocity records, and an auto-shutoff to prolong life. The Series MVA also has a detachable probe for convenient replacing, if necessary. The unit includes a 6 blade mini-vane probe, nylon case, and a 9V battery.

Model MVA-02, Mini Vane Anemometer
Model MVA-03, Mini Vane Anemometer with Humidity Sensor
Model MVA-04, Mini Vane Anemometer with Humidity
and Barometric Sensors

ACCESSORIES
A-553, Spare attachable vane for MVA-02
A-554, Spare attachable vane for MVA-03 & -04

SPECIFICATIONS
RANGES
Air Velocity: 79 to 4921 fpm, 0.4 to 25 m/s; 1.5 to 90 km/hr; 0.9 to 55 mph; 0.8 to 48 knots; 1 to 10 Beaufort.
Air Volume: 0 to 9999 CFM & CMM.
Temperature: -4 to 140°F (-20 to 60°C).
Humidity: 0 to 100%.
Barometric Pressure: 10.3 to 32 in Hg; 350 to 1100 hPa; 263 to 825 mm Hg.

ACCURACY
Air Velocity: ±2% FS (+0.2% of reading m/s; +0.8% of reading km/hr; +0.4% of reading mph and knots; +40% of reading fpm).
Relative Humidity: 20 to 80%: 3.5%; 0 to 20% and 80 to 100%: 5%.
Temperature: ±1.8°F; ±1°C.
Barometric Pressure: ±0.1 in Hg; ±3 hPa; ±1.5 mm Hg.

RESOLUTION
Air Velocity: 0.1 (1 for ft/min and Beaufort).
Air Volume: 1.
Temperature: 0.1°C.
Humidity: 0.1%.
Barometric Pressure: 0.1.

RESPONSE TIME
Air Velocity: 2 seconds.
Air Volume: 2 seconds.
Temperature: 1 second.
Humidity: 5 minutes to stabilize.
**Barometric Pressure:** 1 minute.

LCD Size: 1.65″ x 1.30″ (42 x 33 mm).
Power Requirements: 9 volt battery.
Battery Life: 50 hours continuous use.
Vane Diameter: 1.18″ (30 mm).
Cable Length: 35.4″ (90 cm).
Weight: 9.2 oz (260 g).
Agency Approvals: CE.

Dwyer®

Model 8901 Vane Thermo-Anemometer
Measures Air Volume, Air Velocity, and Temperature

CE

2-51/64 [71.0]
1-3/16 [30.0]
7-5/32 [181.8]
2-1/32 [51.7]
15/16 [24.0]
3-1/64 [76.5]
2-3/4 [70.0]
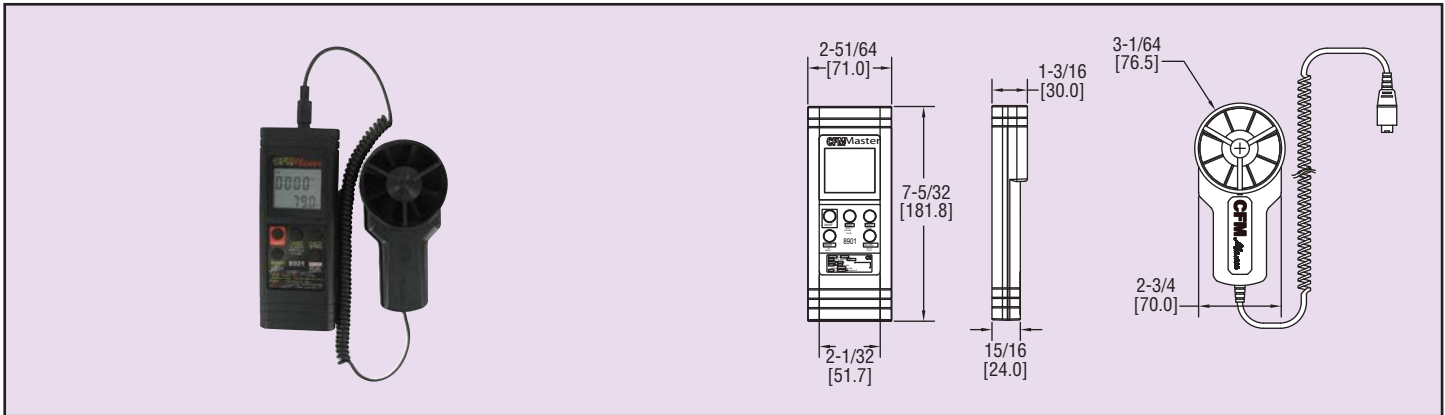
Model 8901 Vane Thermo-Anemometer is ideal for balancing air conditioning and heating ducts or checking the operation of fans and blowers. Model 8901 measures air volume in cubic feet per minute and cubic centimeters per second, as well as air velocity in ft/min, m/s, knots, km/hr and mph with ±2% accuracy. The multifunction LCD can simultaneously display air velocity and temperature or air flow and temperature in selectable units. Built-in temperature sensor provides measurements with an accuracy of ±2 with the capability to display the results in °F/°C. Model 8901 can either store measurements or transfer the data to a PC via RS-232 communication. Additional features include data hold, as well as the ability to record minimum, maximum and average readings. These units also feature a detachable probe for easy replacement, if necessary. Model 8901 includes 9 V battery, carrying case and instruction manual.

Model 8901, Vane Thermo-Anemometer

ACCESSORIES
A-550, Replacement Probe with Vane
A-552, USB Cable and RS-232 Software

SPECIFICATIONS
AIR VELOCITY
Range: 80 to 6900 ft/min (0.4 to 35 m/s).
Accuracy: ±2% of reading or last significant digit (whichever is greater).
Resolution: 1 ft/min (0.01 m/s).
Response Time: 1 second.

AIR VOLUME
Range: 9999 (CFM, m³/s).
Accuracy: ±2% of reading or last significant digit (whichever is greater).
Resolution: 0.1 (0 to 999.9) or 1 (1000 to 9999).
Response Time: 1 second.

TEMPERATURE
Range: 14 to 122°F (-10 to 50°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.
LCD Size: 1-1/4 x 1-5/8″ (37 x 42 mm).
Serial Communications: 2400 bps, 8 data bits.
Power Requirements: 9 V battery.
Battery Life: 100 hours.
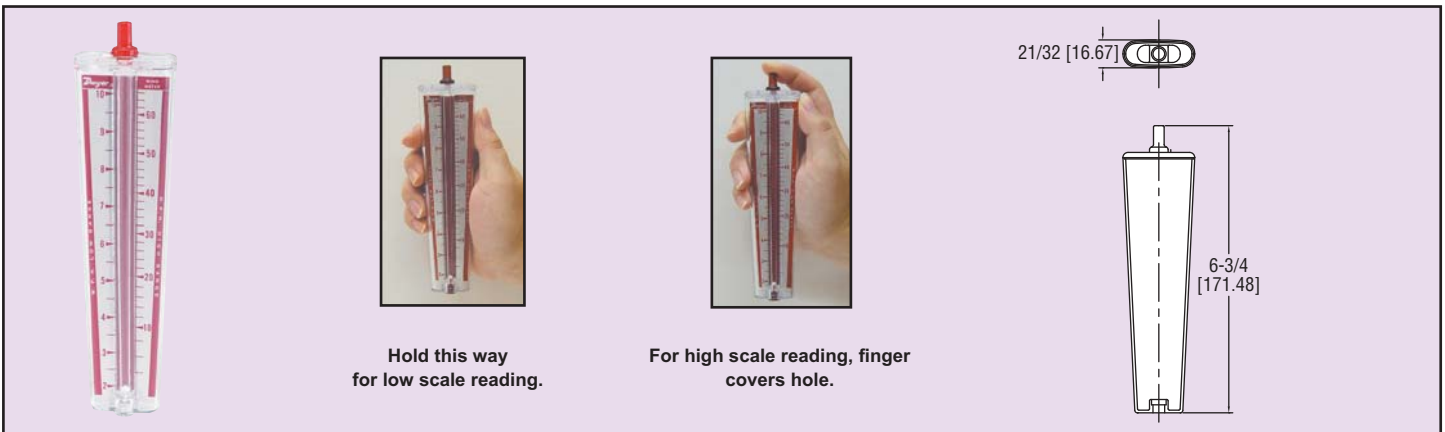**Vane Diameter:** 2-7/8″ (70 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Dwyer®

Portable Wind Meter

21/32 [16.67]
6-3/4 [171.48]

Hold this way for low scale reading.

For high scale reading, finger covers hole.

Ideal for yachtsmen, outdoorsmen, farmers, etc. A welcome gift. Use anywhere. Direct reading, no calculations. Hold meter at eye level, back of unit to wind. White ball in tube indicates wind speed. Meter has two scales for maximum accuracy and easy reading — low, 2-10 and high, 4-66 m.p.h. range. For high range, cover hole with finger. Pocket size, sturdy plastic, has case.

Note: Standard discounts do not apply to the Windmeter. Sporting goods dealers and distributors: Contact factory for quantity discounts.)

Dimensions: 5/8″ W X 6-3/4″ H X 17/32″ D.

Wind Meter-MPH, mph scale
Wind Meter-KNOT, knots scale
Wind Meter-KPH, kph scale
Wind Meter-MPS, mps scale
A-376, Replacement floats for windmeter, tube of 3

Pocket Wind Meter

MW-1 Mini Thermo-Anemometer

CE

Measure wind speed and temperature with the Series MW Pocket Wind Meter. Easily view readings on the four digit 2″ (51 mm) high LCD display with wind speed bar graph. Selectable air velocity ranges include m/s, ft/min, km/h, mph, and knots. Ambient temperature recorded in °F or °C. The MW also features automatic shut-off, detailed instruction manual and protective plastic water resistant housing that floats. Accessories include a lanyard.

Model MW-1, Hand-held, Mini-vane Thermo-Anemometer

ACCESSORY
A-166, Replacement vane for MW-1

SPECIFICATIONS
Air Velocity Range: 0 to 30 m/s, 0 to 5860 ft/min, 0 to 90 km/h, 0 to 65 mph, 0 to 55 knots.
Temperature/Wind-chill Ranges: 14 to 113°F (-10 to 45°C).
Temperature Resolution: 0.36°F (0.2°C).
Accuracy: Wind speed: ±5% of reading. Temperature: ±3.6°F (±2°C).
Resolution: 0.1 m/s, 19 ft/min, 0.3 km/h, 0.2 mph, 0.2 knots.

Sample Time: 1 reading per second.
Water-resistant: up to 3 ft (1 meter).
Power: Lithium battery CR-2032 or equivalent (not included).
Auto-off: 14 minutes after last key is pressed.
Impeller: Plastic, replaceable.
Case: Plastic.
Display: 2.32 x 2 in (59 x 51 mm).
Weight: 1.84 oz (52.1 g).
Agency Approvals: CE.

Model 89088

Pocket Wind Meter

Measures Wind Speed, Wind Chill and Temperature

CE
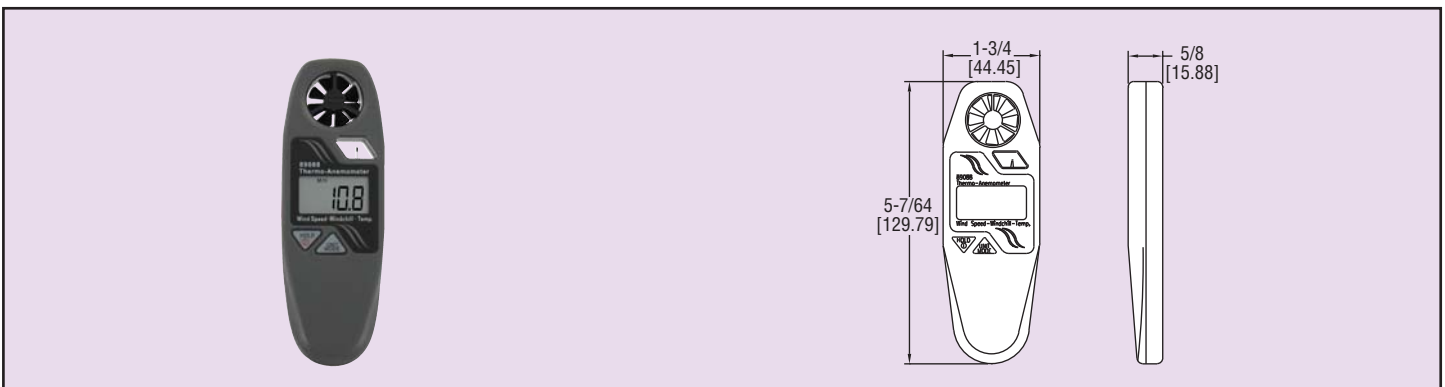
The Model 89088 measures wind speed, temperature and wind chill accurately with its rotating vane and thermo-anemometer sensor. The body and rotating vane are constructed of light weight, sturdy ABS plastic. The ABS impeller spins on a high precision jewel bearing allowing for maximum performance. Wind speed, maximum wind speed, temperature and wind chill can quickly be viewed on the LCD display in user selectable measuring units of degrees F or C, m/s, ft/min, knots, mph, k/hr and beauforts. The 89088 also features a data hold button and a 5 minute automatic shut-off to conserve battery life. Accessories include a supplied battery and a cloth carrying pouch.

Units vs. Range as shown on display

Unit	Range	Resolution
M/S	1.1-20.0	0.1
FT/MIN	60-3937	0.1
KNT	0.4-38.8	0.1
KMH	0.8-72.0	0.1
M/H	0.5-44.7	0.1
BF	1-8	1

SPECIFICATIONS
Air Velocity Range: 1.1-20.0 m/s, 60-3937 ft/min, 0.4-38.8 knots, 0.8-72.0 k/hr, 0.5-44.7 mph, 1-8 beaufort.
Wind Speed Limits: 0.5-44.7 mph (60-3937) ft/min.
Temperature/Wind Chill Limits: 0 to 50°C (32 to 122°F).
Accuracy: Velocity: ± 5% or ± last significant digit (whichever is greater); Temperature: ±1°C (±2°F).
Resolution: Temperature: 0.1°; Air velocity: See chart.
Power: Supplied with CR2032 battery. 48 hour life under continuous usage. Auto-off: After 5 minutes.
Materials: Impeller: ABS; Case: ABS.
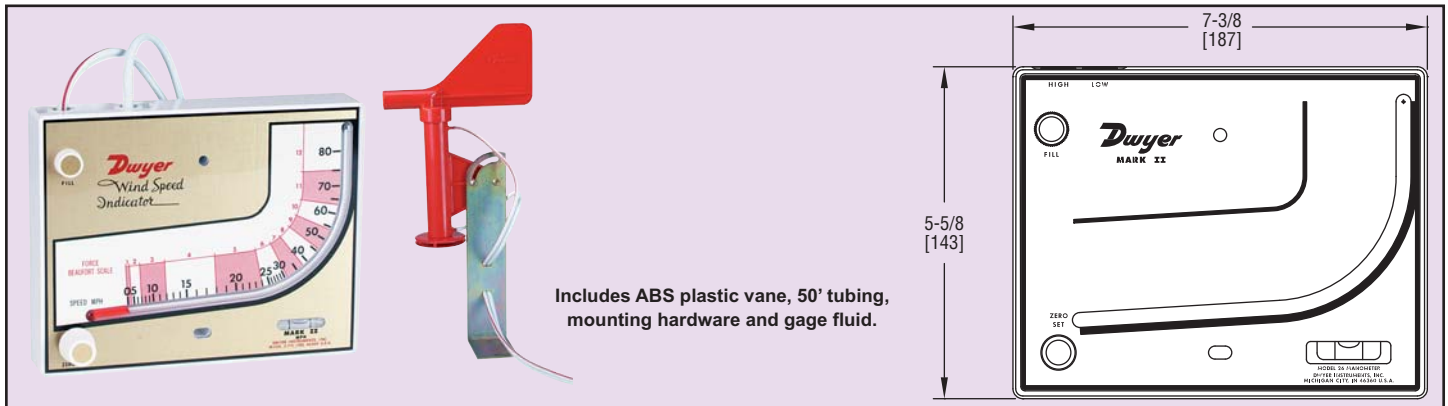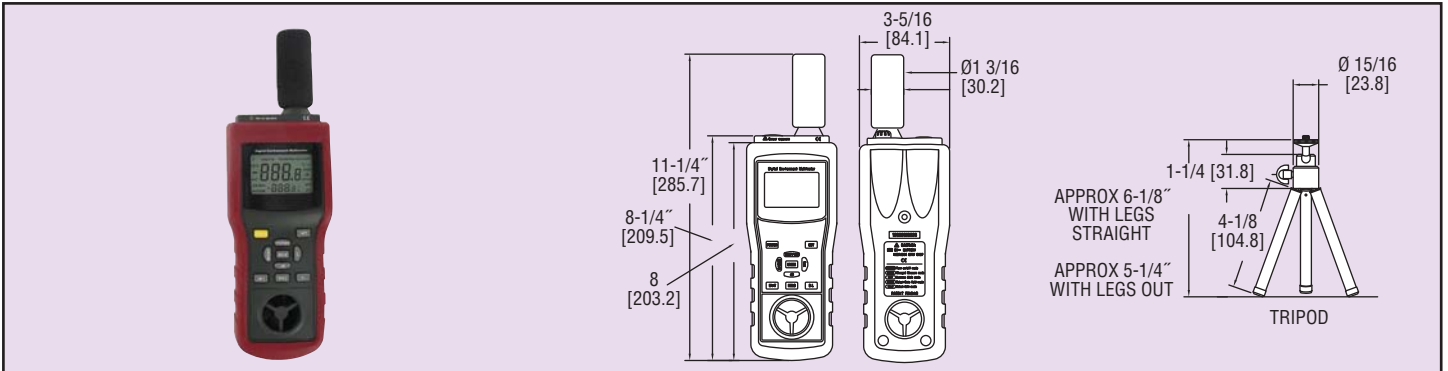**Display:** 28 (L) x 16 (W) mm.
Weight: 50 g (1.76 oz).
Agency Approvals: CE.

Model 89088

TEST EQUIPMENT

Wind Meters

Mark II Wind Speed Indicator

Dwyer®

7-3/8 [187]

5-5/8 [143]

HIGH   LOW

Dwyer MARK II

FILL

ZERO SET

MODEL 36 PANOMETER
DWYER INSTRUMENTS, INC.
MICHIGAN CITY, IN 46360 U.S.A.

Includes ABS plastic vane, 50' tubing, mounting hardware and gage fluid.

Perfect for your living room, den, workshop or office. Instruments are accurate, low-cost and practical. Standard model indicates wind speed directly on liquid filled scale reading in both Miles per Hour (0-80) and Beaufort scale (1-12). Also available is metric model, same as above but reading 0-130 kilometers per hour. To order, specify Mk II Wind Speed Indicator, MPH or Mk II Wind Speed Indicator, KPH.

Mark II WSI, mph scale
Mark II WSI Metric, kph scale

Note: Standard discounts do not apply to the Wind Speed Indicator. Sporting goods dealers and distributors: Contact factory for quantity discounts.

Dwyer® | **Model EMMA**

Digital Multifunction Environmental Meter
Monitor Humidity, Temperature, Air Velocity and More

CE

3-5/16 [84.1]

Ø1 3/16 [30.2]

11-1/4″ [285.7]

8-1/4″ [209.5]

8 [203.2]

Ø 15/16 [23.8]

1-1/4 [31.8]

APPROX 6-1/8″ WITH LEGS STRAIGHT

4-1/8 [104.8]

APPROX 5-1/4″ WITH LEGS OUT

TRIPOD

Monitoring the environmental conditions is more convenient with the Model EMMA multifunction meter. Humidity, temperature, air velocity, air flow, sound and light measurements are combined in one easy to use instrument. The large, dual-line 4-digit LCD display shows both the current and average reading. For reading measurements in dimly lit areas, the display has a built-in back light. Besides measuring the current and average reading, the Model EMMA allows the user to read the minimum, maximum and differential measurement for each of the parameters. Included with the meter is the carrying case, rubber boot, battery and tri-pod.

Model EMMA, Multifunction Environmental Meter

SPECIFICATIONS
Range:
    Temperature: 14 to 140°F (-10 to 60°C);
    Relative humidity: 0 to 100% RH;
    Sound level: 30 to 130 dB(A), 35 to 130 dB(C);
    Illumination: 0 to 50,000 lux;
    Wind speed: 96 to 5913 fpm;
    Air flow: 0 to 999,900 cfm (0.5 30 30 m/s).
Accuracy:
    Temperature: ±2.7°F (1.5°C);
    Relative humidity: ±3% RH (20 to 80% @ 25°C);
    Sound level: ±1.5 dB;
    Illumination: ±5% of reading + 10;
    Wind speed: ±3% of reading + 10;
    Air flow: ±3% of reading + 10.

Display: Dual line, 4-1/2 digit LCD display.
Temperature Limits: 14 to 140°F (-10 to 60°C).
Resolution:
    Temperature: 0.1°F/°C;
    Relative humidity: 0.1%;
    Sound level: 0.1 dB;
    Illumination: 1 up to 2,000 lux; 10 up to 20,000 lux; 100 up to 50,000 lux.
Power Requirement: 9V battery.
Response Time: 500 msec.
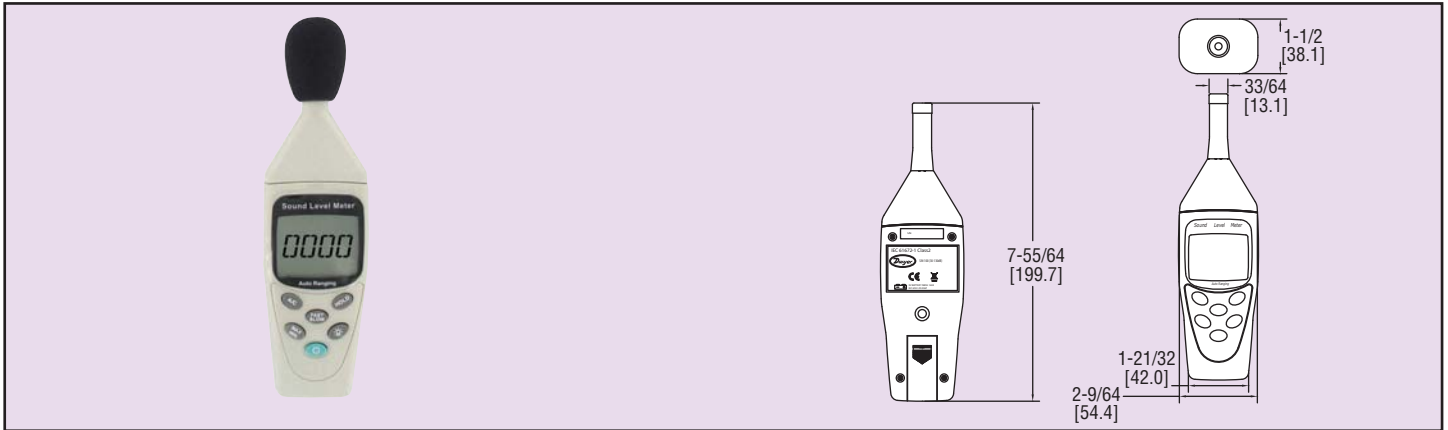**Weight:** 15.5 oz (430 g).
Agency Approvals: CE.

NEW PRODUCT!

© 2009 Dwyer Instruments, Inc.

Model SM-100

SM-100 Digital Sound Meter
Measures Noise Levels From 30 to 130 dB

CE

1-1/2 [38.1]
33/64 [13.1]
7-55/64 [199.7]
1-21/32 [42.0]
2-9/64 [54.4]

Model SM-100 Digital Sound Meter is ideal for measuring noise levels from 30 to 130 dB with accuracy of ±1.5 dB. Model SM-100 has a frequency of 31.5 Hz to 8 kHz, three different dB ranges, and a 1/2″ condenser microphone. The SM-100 has two frequency weightings: the "A" weighting ranges from 30 to 130 dB, while the "C" weighting ranges from 35 to 130 dB. The four digit LCD backlit display has the ability to update in 0.5 seconds when the unit is set to fast response. Model SM-100 features data hold, ability to record maximum/minimum, auto ranging, auto power-off, and a dynamic range of 50 dB. The compact size of the SM-100 makes it very easy to operate and store. Each unit includes 9V battery, carrying case, black foam cover to protect the sensor, and instruction manual. The SM-100 is ideal for technicians measuring and recording sound levels in zones or rooms of buildings, musical halls, theaters and near equipment or machinery on the plant floor.

Model SM-100, Handheld Digital Sound Meter

SPECIFICATIONS
Dynamic Range: 50 dB.
Measuring Level Range:
  A weighting: 30 to 130 dB;
  C weighting: 35 to 130 dB.
Accuracy: ±1.5 dB (at 94 dB @ 1 kHz).
Frequency Range: 31.5 Hz to 8 kHz.
Temperature Limits:
  Operating: 41 to 104°F (5 to 40°C);
  Storage: 14 to 140°F (-10 to 60°C).

Humidity Limits:
  Operating: Below 80% RH;
  Storage: Store below 70% RH.
Elevation Limit: Maximum 6562 ft (2000 m) above sea level.
Display: 4 digit LCD with 0.5 second update when set to fast response.
Resolution: 0.1 dB.
Power Requirement: One 9V battery.
Battery Life: Approximately 50 hours with alkaline battery.
Size: 7.8″ L x 2.1″ W x 1.5″ H (200 L x 55 W x 38 H mm).
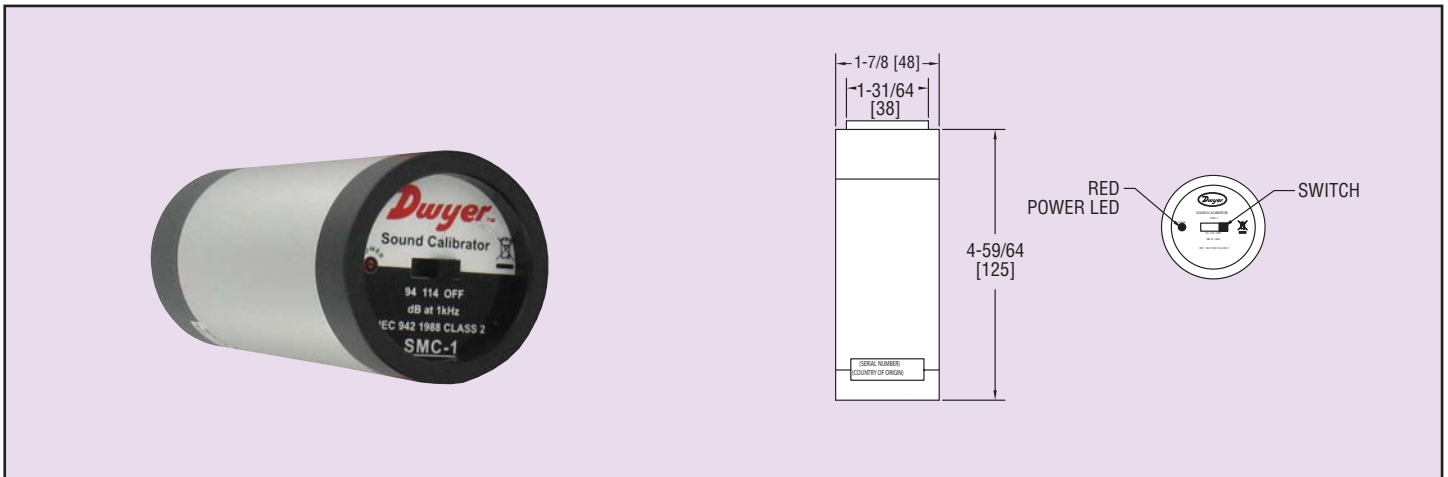**Weight:** 6 oz (170 g).
Agency Approval: CE.

Dwyer®

Model SMC-1

SMC-1 Sound Calibrator
Set Standard Noise Levels at Either 94 or 114 dB

1-7/8 [48]
1-31/64 [38]
4-59/64 [125]
RED POWER LED
SWITCH
(SERIAL NUMBER)
(COUNTRY OF ORIGIN)

Model SMC-1 Sound Calibrator is ideal for setting standard noise levels at 94 dB and 114 dB. The SMC-1 has an output frequency of 1 kHz, ±4%. This unit functions best when environment conditions have a temperature of 68°F (20°C), relative humidity of 65%, and an atmospheric pressure of 29.9″ Hg (1013 mbar). The SMC-1 features a measuring accuracy of ±0.5 dB, a low battery indicator, and a 1/2″ microphone adapter. This calibrator has a compact design that allows the user to conveniently operate and store the product. At 10 oz (283 g) including the battery, the SMC-1 is also extremely lightweight. Each unit includes carrying case, 9V battery, and instruction manual. This calibrator is ideal for calibrating sound meters such as the Dwyer Series SM-100.

Model SMC-1, Sound Calibrator

SPECIFICATIONS
Selectable Sound Output Level: 94 dB or 114 dB.
Output Frequency: 1 kHz ±4%.
Accuracy: ±0.5 dB.
Temperature Limits:
  Operating: 32 to 104°F (0 to 40°C);
  Storage: 14 to 140°F (-10 to 60°C).
Humidity Limits:
  Operating: 10 to 70% RH;
  Storage: 10 to 90% RH.

Elevation Limit: Maximum 6562 ft (2000 m) above sea level.
Power Requirement: Included 9 V battery.
Battery Life: Approximately 20 hours with alkaline battery.
Size: 1.89″ diameter x 4.92″ length (48 mm diameter x 125 mm length).
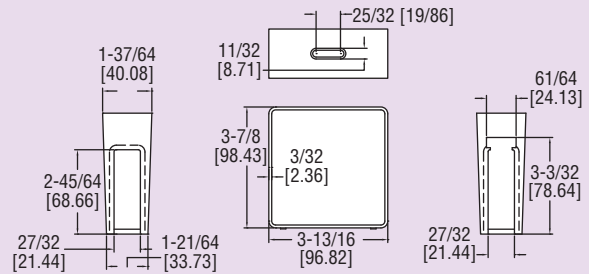**Weight:** 10 oz (283 g).
Standards: ANSI S1.40-1984 and IEC 942 1988 Class 2.

Model 480 Vaneometer™ Swing Vane Anemometer

Use This Sensitive Dwyer Unit to Measure Low Air Velocities — at Low Cost *

The 480 Vaneometer™ Swing Vane Anemometer is a durable low-priced instrument specifically designed to simplify the measurement of low air velocities from 25 to 400 feet per minute. OSHA, EPA and other safety ventilation requirements for spray booths and at fume, smoke and dust exhaust hoods can now be quickly checked, even by untrained personnel. Its small size and light weight — only four ounces make it ideal to carry from one work station to another. A versatile steel mounting bracket for continuous monitoring is also included. The Vaneometer™ Swing Anemometer is accurate to ±5% of full scale to 100 FPM and ±10% from 100 FPM to top of scale. It has a spirit level to ensure accurate readings and the large scales are easy to read and visible from both sides. The housing is molded from tough ABS plastic and easy to clean with soap and water. The polyester vane can be cleaned with lacquer thinner. A spare vane is provided.

Model	Description
480	25-400 fpm
M480	0-2.0 m/s
A-390	Extra vanes, pkg. of 2
A-406	Molded carrying case
A-407	Plastic carrying pouch

Use a Vaneometer™ Swing Vane Anemometer to measure velocity of air flow into laboratory fume hoods and at paint spray booths to determine when to change filters. Or wherever needed to meet OSHA standards of ventilation for smoke, dust or fume removal.

Series TH Thermohygrometer Pen

Dual Display, Compact Design

CE
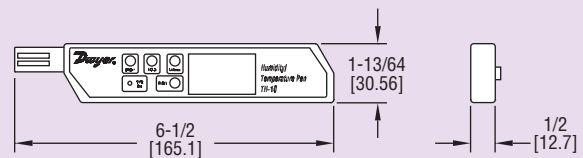
Simultaneously measure temperature and relative humidity with the Series TH Thermohygrometer Pen. This unit features a dual LCD, user selectable units of measure, MAX/MIN functions, reset and display hold. A built-in self calibration utility allows for field calibration using the optional relative humidity calibration reference. The Model TH-10 includes a pocket clip, battery and instruction manual. The optional kit, Model TH-10K, includes thermohygrometer pen with 33% and 75% RH calibration standards and a hard vinyl carrying case.

Model TH-10, Thermohygrometer Pen
Model TH-10K, Thermohygrometer Pen Kit

ACCESSORY
TH-CAL, 33% and 75% RH Calibration Standards

SPECIFICATIONS
Range: RH: 10 to 90%, temp: 32 to 122°F (0 to 50°C).
Accuracy: RH: ±5%, temp: ±1.5°F or °C.
Display: Dual 3 digit LCD.
Resolution: RH: 1%; Temp: 0.1°F or °C.
Response Time: Temp: 1 sec; RH: 1 min 80% of change.
Compensated Temperature Range: 32 to 122°F (0 to 50°C).
Power Requirements: 3V lithium (CR2032) battery (included).
Weight: 2.3 oz (65 g).
Agency Approvals: CE.

APPLICATIONS
Measure temperature and humidity in greenhouses, clean rooms, drying rooms, HVAC, food, pharmaceutical, and textile industries.

Dwyer®

Model 485B

Thermo-Hygrometer
Measures % RH, Temperature, Dew Point and Wet Bulb

CE RoHS

New Six Button Operation Provides Quick Access to Enhanced Features

Soft Carrying Case Included with Every Unit

Model 485B Digital Thermo-Hygrometer is a versatile, compact, hand-held instrument for measuring percentage of relative humidity and temperature in °F or °C. Dew point and wet bulb temperature is derived from relative humidity and temperature measurements and displayed on the LCD. Hold key freezes the current temperature and relative humdity readings for situations where readings fluctuate. Store up to 99 readings with the non-volatile memory function – ideal for technicians needing to take multiple readings for later analysis.

Model 485B-1, Digital Thermo-Hygrometer includes 9V battery, sensing probe, wrist strap, soft carrying case and instructions

ADDITIONAL PARTS
RP1, Thermo-hygrometer % RH and temperature probe with coiled cable
UHH-C1, Soft carrying case

SPECIFICATIONS
Service: Humidity, temperature, wet bulb and dew point temperature detection in clean air.
Temperature Limits:
    Process: -40 to 176°F (-40 to 80°C);
    Ambient: 5 to 125°F (-15 to 51°C).
Range Relative Humidity: 0 to 100% (non-condensing).
Accuracy Relative Humidity: ±2% FS over 10 to 90% @ 77°F (25°C).
Range Temperature: -20 to 140°F (-28 to 60°C).
Accuracy Temperature: ±0.9°F @ 72°F (±0.3°C @ 25°C).
Display: 4.5 digit LCD.
Resolution: 0.1%, 0.1 °F/°C.
Probe Length: 8″ (203 mm) insertion.
Power Requirements: 9V alkaline battery included.
Weight: 16 oz (454 g).
Agency Approvals: CE, RoHS.

Dwyer®

Model THI-10

Digital Thermohygrometer
Large Memory, Dew Point and Wet Bulb Temperature Functions

CE

1-7/8 [47.62]

8-7/16 [214.33]

1-1/2 [38.16]
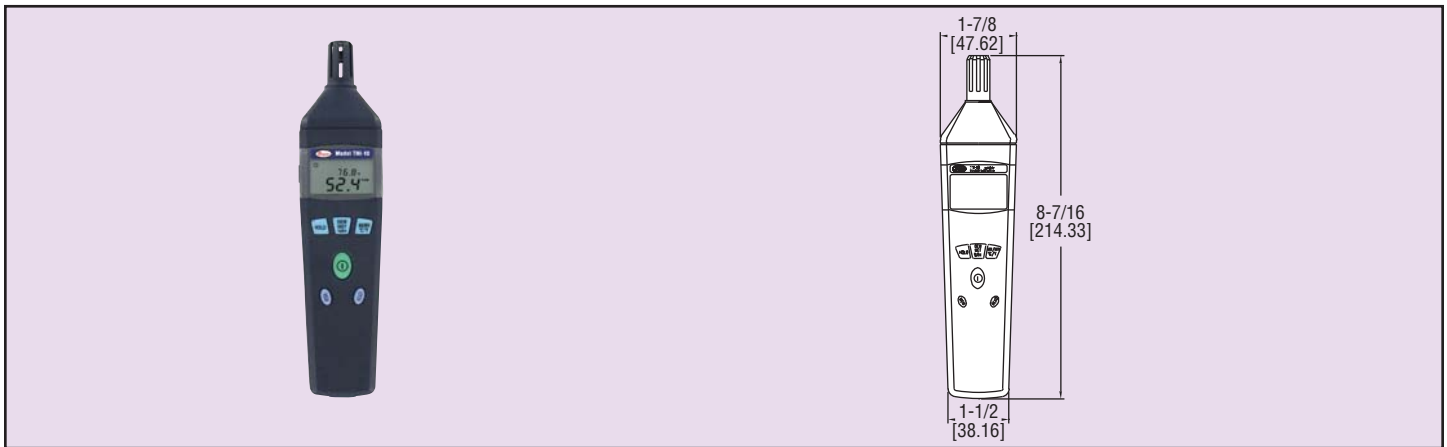
The Model THI-10 Digital Thermohygrometer accurately measures relative humidity and ambient temperature. Up to 99 readings can be stored in non-volatile memory allowing the HVAC technician to record the data after returning to the office. This compact thermohygrometer also features user selectable engineering units, Maximum/Minimum functions, dew point and wet bulb temperature measurements. The Model THI-10 includes a soft carrying case with a belt loop for easy transportation.

Model THI-10, Digital Thermohygrometer

SPECIFICATIONS
Service: Humidity and temperature detection in air.
Range: Relative humidity: 1 to 99% (non-condensing); Temperature: -4 to 140°F (-20 to 60°C).
Accuracy: Relative humidity: ±3%; Temperature: ±1.5°F (±0.8°C).
Display: Dual LCD display (4 digit upper display / 3 digit lower display).
Temperature Limits: Ambient: 32 to 144°F (0 to 60°C).
Resolution: Relative humidity: 0.1%; Temperature: 0.1°.
Power Requirements: 9V alkaline battery.
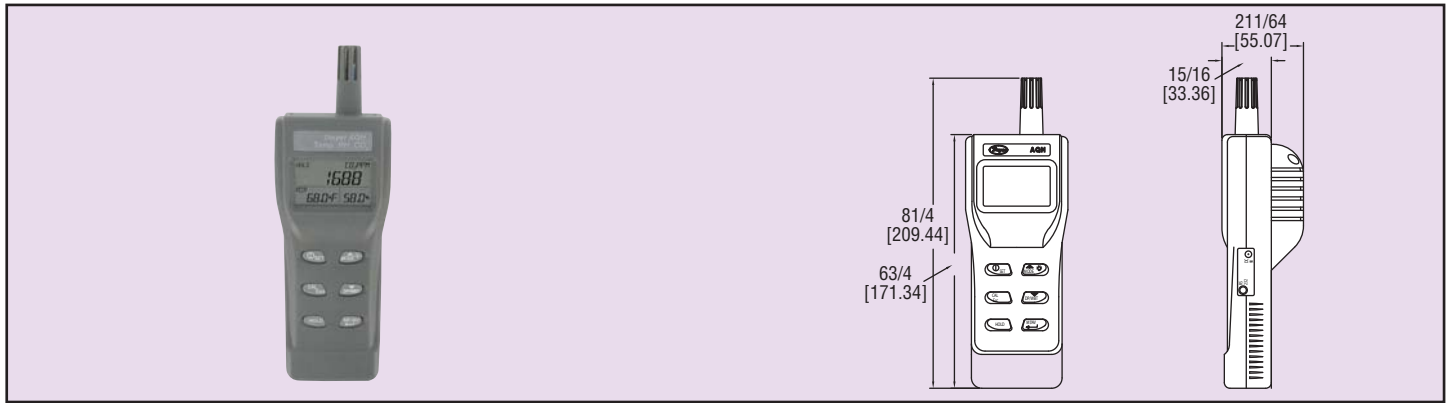**Battery Life:** Approximately 200 hours.
Weight: 5.6 oz (160 g).
Agency Approvals: CE.

Dwyer®

Model AQH-20

Handheld Indoor Air Quality Meter

Measures CO₂, Temperature and Humidity

CO_2

CE

211/64 [55.07]
15/16 [33.36]
81/4 [209.44]
63/4 [171.34]

The Model AQH-20 Indoor Air Quality Meter reduces the number of instruments a contractor has to carry by measuring the carbon dioxide concentration, air temperature, and humidity percentage in one device. A large backlit LCD display shows all three parameters simultaneously. The Model AQH-20 can display dew point or wet bulb temperatures in place of the ambient temperature. Minimum, maximum, and average readings are easily accessible through the function buttons. By pressing the hold key, the current values are held so that they can be recorded. An audible alarm warns the user that the current ambient conditions are becoming hazardous. The Model AQH-20 includes a hard carrying case and four AA alkaline batteries.

Model	CO₂ Range	Humidity Range	Temperature Range
AQH-20	0 to 2000 ppm	0.0 to 99.9%	14 to 140°F (-10 to 60°C)

ACCESSORY
TH-CAL, 33% and 75% Calibration Salt Kit

SPECIFICATIONS
Ranges:
  CO_2: 0 to 2000;
  Temperature: 14 to 140°F (-10 to 60°C);
  Relative Humidity: 0.0 to 99.9% RH.
Accuracy:
  CO_2: ±30 ppm ±5% of reading;
  Temperature: ±0.9°F (±0.6°C);
  Humidity: ±3% RH (10 to 90%), ±5% (0.0 to 9.9% or 90 to 99.9%).
Resolution:
  CO_2: 1 ppm;
  Temperature: 0.1°F (0.1°C);
  Humidity: 0.1% RH.

Response Time:
  CO_2: < 30 seconds;
  Temperature: < 2 minutes;
  Humidity: <10 minutes.
Display: 4 digits for temperature/CO_2 and 3 digits for humidity.
CO2 Sensor: Non-dispersive infrared.
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits (Non-Condensing): 0 to 95% RH.
Power Requirements: Four AA alkaline batteries.
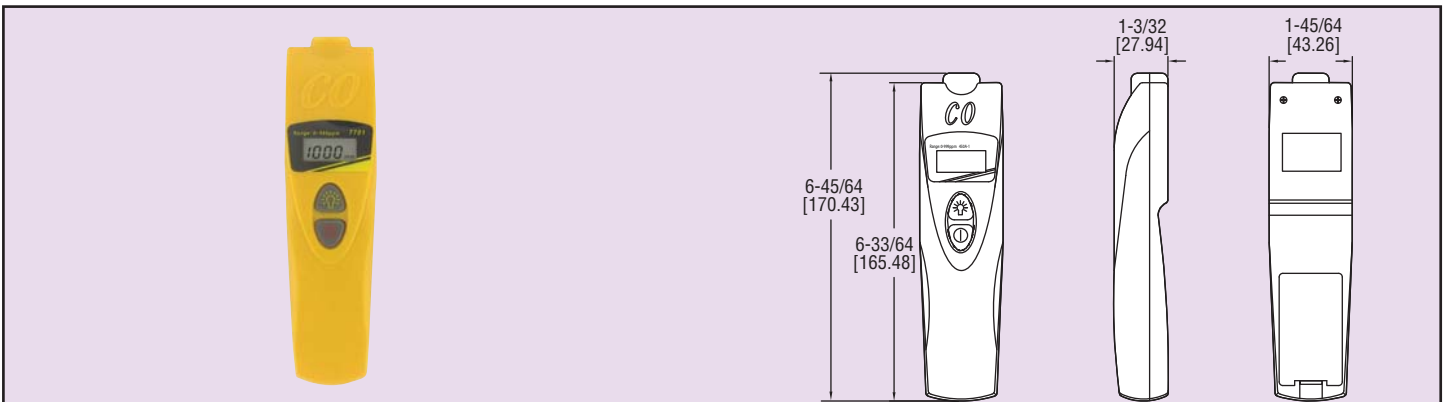**Warm Up Time:** 30 seconds.
Weight: 6.76 oz (200 g).
Agency Approvals: CE.

Dwyer®

Model 450A-1

Digital Pocket Size Carbon Monoxide Meter

Measures Up To 999 ppm, Audible Alarm

CE

1-3/32 [27.94]
1-45/64 [43.26]
6-45/64 [170.43]
6-33/64 [165.48]

The Model 450A-1 Digital Pocket Size Carbon Monoxide Meter measures the ambient concentration of carbon monoxide (CO) in the environment and displays the measurement on the two line digital LCD screen. Besides the measurement, the maximum recorded CO value since the last reset is shown. An audible carbon monoxide alarm gives warning of CO levels above 25 ppm. For viewing in poorly lit environments, the built-in backlight brightens the display. Model 450A includes soft carrying case with belt loop, wrist strap, and three AAA batteries.

Model 450A-1, Digital Pocket Size Carbon Monoxide Meter

SPECIFICATIONS
Range: 0 to 999 ppm.
Accuracy (at 20 ±5°C, 50 ±20% RH): ±20% @ 0 to 100 ppm; ±15% @ 100 to 500 ppm.
Resolution: 1 ppm.
Display: Dual digital LCD display.
Response Time: Less than 60 seconds.
Sensor: Electrochemical carbon monoxide sensor.
Temperature Limits: -10 to 60°C (14 to 140°F).
Humidity Limits (Non-Condensing): 5 to 99% RH.
Power Requirements: 3 AAA alkaline batteries.
Battery Life: 250 hours with backlight off; 35 hours with backlight on.
Weight: 4.23 oz (120 g).
Alarms: Audible, preset at 25 ppm.
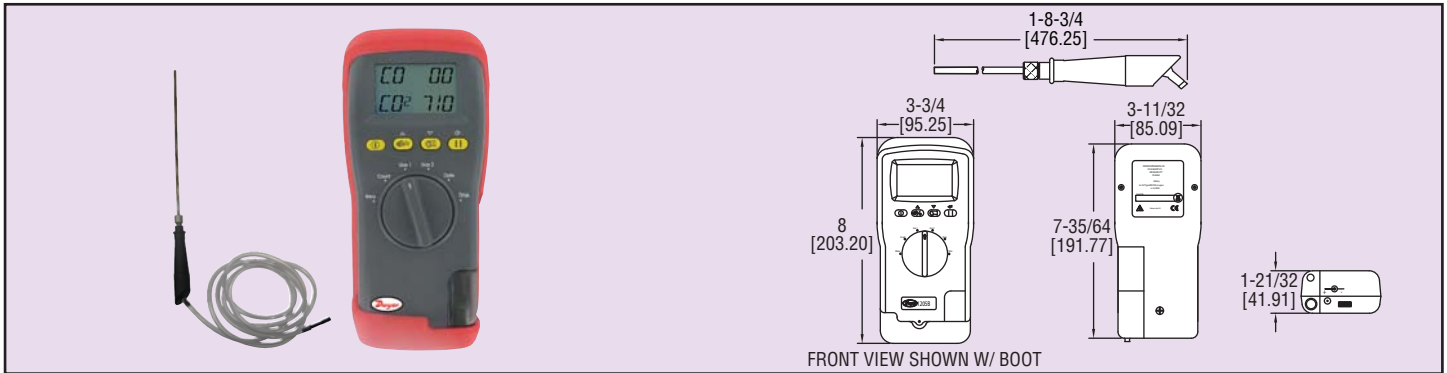**Agency Approval:** CE.

Dwyer®

Model 1205B

Handheld CO/CO₂ Gas Analyzer

Measures Indoor Air Quality, Includes Sampling Probe with Hose

CE

1-8-3/4 [476.25]

3-3/4 [95.25]

3-11/32 [85.09]

8 [203.20]

7-35/64 [191.77]

1-21/32 [41.91]

FRONT VIEW SHOWN W/ BOOT

The Model 1205B Gas Analyzer accurately measures the concentration of carbon monoxide (CO) and carbon dioxide (CO₂) in a duct or space. The Gas Analyzer displays the measurement on a two line digital LCD display with backlight. The unit's memory stores up to 255 sets of readings that are logged manually or auto-logged with 1 to 10 minute intervals. Besides measurement recording, Model 1205B can provide a summary of average and maximum levels reached during recording. Results then can be printed via an optional infrared printer. Model 1205B includes batteries, 120V power supply, protective rubber boot with integral magnet, sampling probe, and a canvas carrying case.

Model 1205B-0, Gas Analyzer and Logger for CO and CO₂

ACCESSORIES
Model 1205B-US, 120 VAC Power Adapter for 1205B
Model 1205B-EU, 240 VAC Power Adapter for 1205B
Model 1205B-PR, Replacement probe for 1205B

SPECIFICATIONS
Ranges: CO: 0 to 1000 ppm, overflow 2000 ppm; CO₂: 200 to 4000 ppm, overflow 9999 ppm.
Accuracy:
   CO: ±5 ppm<100 ppm;
      ±5%>100 ppm;
      ±10%>1000 ppm;
   CO₂: ±20 ppm<400 ppm;
      ±5%<4000 ppm;
      ±10%>4000 ppm.
Resolution:
   CO: 1 ppm;
   CO₂: 1 ppm.

Display: Dual LCD display.
Temperature Limits: 32 to 104°F (0 to 45°C).
Humidity Limits (Non-Condensing): 10 to 90% RH.
Power Requirements: 100 to 240 VAC, 50 to 60 Hz or N. MH batteries (included).
Battery Life: 6 hours with full charge and pump on.
Weight: 2.21 lb (1 kg).
Agency Approvals: CE.

Dwyer®

Model 1207A

Handheld Flue Gas Combustion Analyzer

Rotary Dial Selection, Display 4 Parameters Simultaneously

CE

7-7/8 [200.00]

1/4 [6.35]

3-3/4 [95.25]

3-11/32 [85.09]

8 [203.20]

7-35/64 [191.77]

10˝ [3000] LONG NEOPRENE HOSE

(FRONT VIEW SHOWN W/ BOOT)

1-21/32 [41.91]
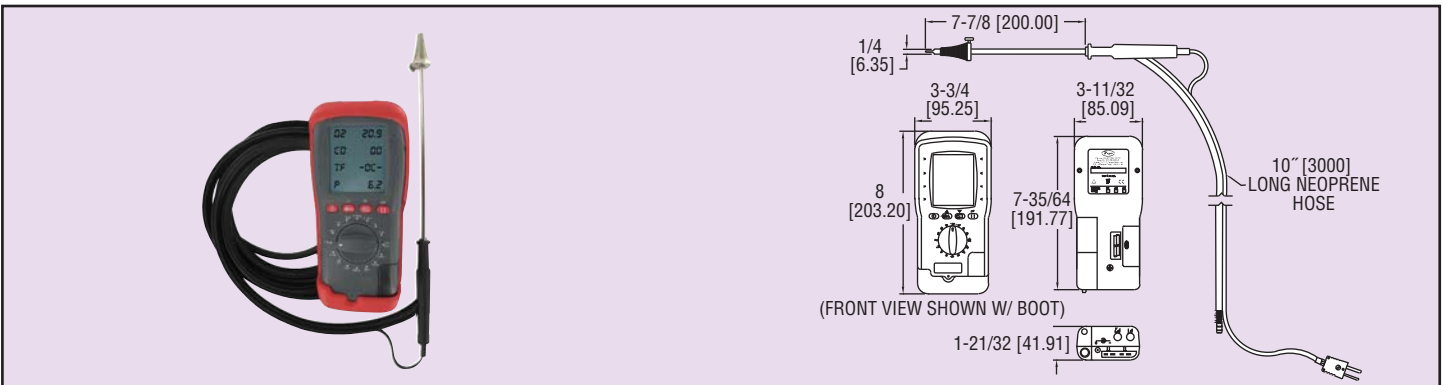
The versatile **Model 1207A Handheld Flue Gas Combustion Analyzer** makes adjusting boilers for optimum efficiency quicker and easier. With the large LCD display, users can monitor four parameters simultaneously and change the parameters shown using the rotary dial selection switch. For extra protection, the analyzer comes standard with a protective boot and magnetic back. In order to track the measurements, the 1207A can store up to 255 time stamped test sets in memory and can output measurements to a serial printer. The 1207A comes preprogrammed for natural gas, light oil, propane, butane, LPG, and wood pellets. Along with analyzing combustion measurements, the analyzer can be used as a CO/CO₂ indicator, pressure manometer, or thermocouple thermometer.

Model 1207A, Handheld Flue Gas Combustion Analyzer

ACCESSORIES
1207A-US, 120 VAC Power Adapter
1207A-EU, 230 VAC Power Adapter
1207A-SP, Serial Printer
1207A-PP, Printer Paper for 1207A-SP
1207A-RF, Replacement Filter

SPECIFICATIONS
Range: O₂: 0 to 21%; CO: 0 to 2000 PPM (4000 PPM max for 15 minutes); CO₂: 0 to 30%; Temp. (flue and net): 32 to 1112°F (0 to 600°C); Efficiency: 0 to 99.9%; Excess air: 0 to 250%.
Accuracy: O₂: ±0.2%; CO: ±10 PPM < 100 PPM else ±5% of reading; CO₂: ±0.3% reading; Temp. (flue and net): ±2°C ±0.3% reading; Efficiency: ±1% reading; Excess air: ±0.2%.
Resolution: O₂: 0.1%; CO: 1 PPM; CO₂: 0.1%; Temp. (flue and net): 0.1°F/C; Efficiency: 0.1%; Excess air: 0.1%.
Ambient Operating Temperature: 32 to 104°F (0 to 40°C).
Power Requirements: 4 AA batteries or optional AC adapter.

Pre-Programmed Fuels: Natural gas, light oil, propane, butane, LPG, and wood pellets.
Probe: 11.8˝ (300 mm) length x 0.25˝ (6 mm) diameter with 7.8˝ (200 mm) stainless steel shaft.
Hose: 10 ft (3 m).
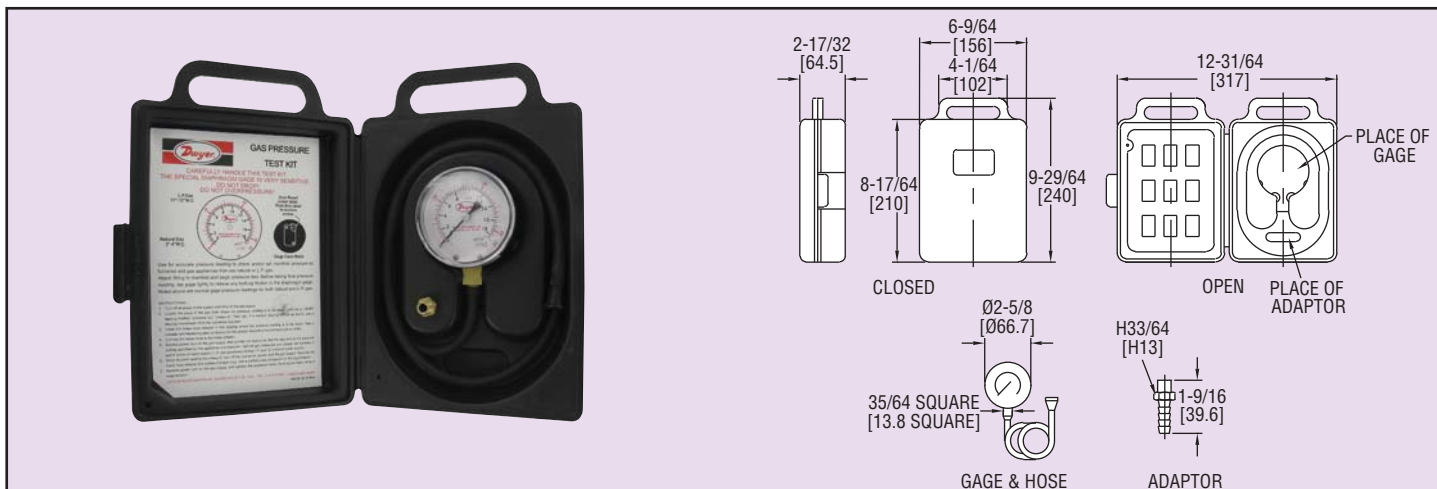**Weight:** 1.7 lb (0.77 kg).
Agency Approvals: CE.

Model LPTK
Gas Pressure Test Kit
Convenient Kit Perfect For Testing LP and Natural Gas Controls

CLOSED

OPEN   PLACE OF ADAPTOR

PLACE OF GAGE

Ø2-5/8 [Ø66.7]

35/64 SQUARE [13.8 SQUARE]

GAGE & HOSE

H33/64 [H13]

1-9/16 [39.6]

ADAPTOR

The **Model LPTK Gas Pressure Test Kit** is ideal for testing LP and natural gas lines and controls. The kit's gage shows if proper pressure is present or if a leak exists. The LPTK Gas Pressure Test Kit is available in two different gage ranges, and each gage is 3% full scale accurate with an easy to use calibration screw on the back of the gage. It is easier to use than a manometer, and includes a sturdy case for added durability and safe handling.

Model	Range
LPTK-01	0 to 15″ w.c. & 0 to 8.6 oz/in^2
LPTK-02	0 to 32″ w.c. & 0 to 18.5 oz/in^2
LPTK-03	0 to 4 kPa & 0 to 40 mbar
LPTK-04	0 to 8 kPa & 0 to 80 mbar

*Consult factory for other range options.

SPECIFICATIONS
Service: Compatible gases.
Wetted Materials: Gage: brass, hose: rubber.
Housing Materials: Steel with black finish.
Lens: Polycarbonate.
Accuracy: ±3% full scale.
Pressure Limit: 110% of range.
Temperature Limits: -40 to 150ºF (-40 to 65ºC).
Size: 2-1/2″ (63 mm).
Process Connections: 1/8″ NPT, brass hose barb.
Case: ABS plastic.
Hose: Rubber, 36″ (91.4 cm).
Tube Nipple: Rubber.
Weight: 1.75 lb (0.8 kg).

Model 920
Smoke Gage Kit
Complete Kit, Includes 10 Components

Popular with professional heating engineers, the Model 920 Smoke Gage Kit includes these quality components:
(1). Dwyer® Smoke Gage Pump — Fast working; the first known unit to conform with ASTM D-2156-XX standards for testing smoke density in flue gases from burning distillate fuels. Filter paper clamps instantly into pump inlet.
(2). Hole Plugs — Packet of 20 to fill awl holes.
(3). Smoke Chart — For easy comparison with samples taken. Laminated plastic, wipes clean.
(4). Awl- Pierces smoke pipe for thermometer and sampling tubes. Large, comfortable plastic handle.
(5). Smoke Gage Filter Paper — An exclusive, time-saving Dwyer development. Roll of filter paper is contained in dispenser box, kept clean and convenient.
(6). Metal Terminal Tube — 8-1/2″ long, heavy gauge brass.
(7). How-to-Use Instructions — Simple with step-by-step illustrations.
(8). Rubber Tubing — Flexible, long-lived.
(9). Spring Holders — A superior design for holding thermometer and sampling tubes.
(10). Kit Case — Tough, durable, one piece high density polyethylene with living hinge and clasp. Foam liner protects contents.
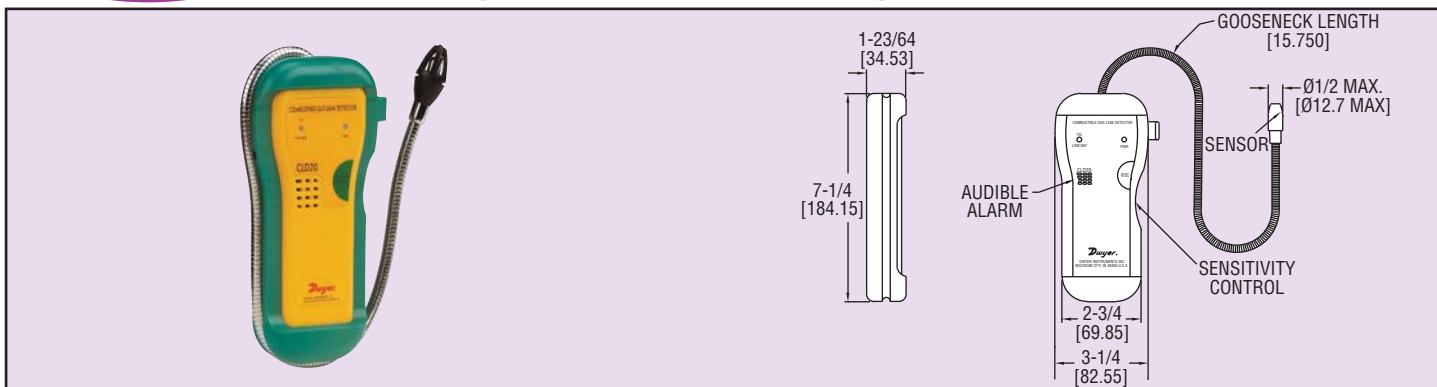
Easy-to-Use Smoke Gage Kit enables you to quickly balance maximum CO_2 with minimum smoke for clean, efficient combustion. Simply take an actual sample of the smoke being tested and compare it to the standards on the smoke chart included. Just 10 full strokes of the pump produces an accurate test sample. Complete testing instructions are included.

Model 920, Smoke Gage Kit

Dwyer®

Model CLD20

Combustible Leak Detector

Adjustable Tick Rate, <1 Second Response

$C\!E$

GOOSENECK LENGTH [15.750]

1-23/64 [34.53]

Ø1/2 MAX. [Ø12.7 MAX]

SENSOR

7-1/4 [184.15]

AUDIBLE ALARM

SENSITIVITY CONTROL

2-3/4 [69.85]

3-1/4 [82.55]

Quickly locate leaks of combustible gases with the Model CLD20 Combustible Leak Detector. Unit provides accurate detection of Methane, Butane, Ammonia, Ethylene Oxide, Alcohols, Industrial Solvents and other combustible or toxic gases. Adjustable tick rate accelerates as the sensor tip approaches a leak and can be re-zeroed to pinpoint the exact location of the leak. The Model CLD20 offers visual LED indication of leak level and automatically recalibrates when turned off and on. Flexible gooseneck and small sensor head allows use in tight, difficult to reach areas.

Model CLD20, Combustible Leak Detector

SPECIFICATIONS
Sensitivity: 50 ppm.
Response Time: Less than 1 second.
Sensor: Solid state semiconductor.
Ambient Operating Temperature/RH: 32 to 104°F (0 to 40°C), 0 to 80% RH (non-condensing).
Power Requirements: One 9V alkaline battery.
Battery Life: Approximately 10 hours of continuous usage.
Warm-up Time: 10 seconds.
Pre-programmed fuels: (partial listing) Methane, Natural gas, Ammonia, Hydrogen, Butane, Propane, Acetone, Ethylene Oxide, Halon, Hydrogen Sulphide, Alcohol, Jet Fuel. Lacquer, and Thinners.
Alarm Settings: Audio: adjustable tick rate 75dB @ 1 ft (30 cm), Visual: flashing LED.
Probe: 16" (40 cm) length, flexible gooseneck.
**Dimensions:** 7.3″H x 3.4″W x 1.4″D (18.5 x 8.5 x 3.4 cm).
Weight: 18 oz (500 g).
Agency Approvals: CE.

Dwyer®

Model RLD1

Refrigerant Leak Detector

Audio and Visual Indication, Flexible Gooseneck Design

$C\!E$

GOOSENECK LENGTH 15-3/4 [400.05]

1-23/64 [34.53]

[Ø1/2 MAX] [Ø12.7 MAX]

SENSOR

7-1/4 [184.15]

AUDIBLE ALARM

POWER SWITCH AND SENSITIVITY CONTROL

2-3/4 [69.85]

3-1/4 [82.55]
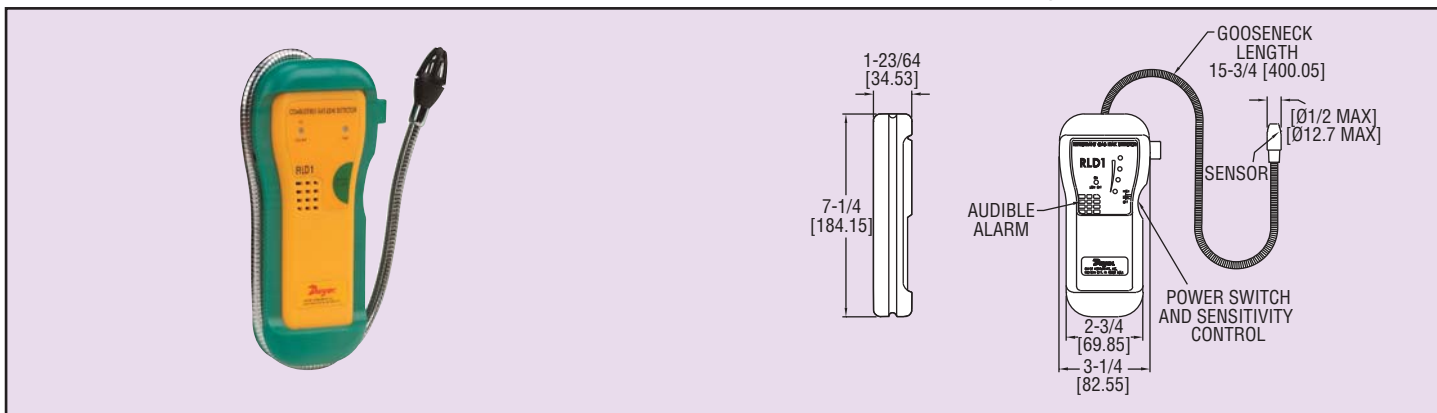
Detect and pinpoint even small leaks of refrigerant gases using the Model RLD1 Refrigerant Leak Detector. The RLD1 is effective in detecting existing refrigerants including HFC, HCFC, CFC, SF6, R134a, and R123. Unit features thumbwheel operation to increase sensitivity and audio and visual indication. An increasing tick rate sounds as a leak is pinpointed and the red indication light flashes more rapidly. The flexible gooseneck probe is ideal for hard to reach areas. Use the model RLD1 in domestic and commercial refrigeration systems, automotive, air conditioning, and quality control testing environments.

Model RLD1, Refrigerant Leak Detector

SPECIFICATIONS
Sensitivity: 0.4 oz/year (11 gm/year) R134a.
Response Time: Less than 1 second.
Sensor: Advanced ionization detection.
Ambient Operating Temperature/RH: 32 to 104°F (0 to 40°C), 0 to 80% RH (non-condensing).
Power Requirements: One 9V alkaline battery.
Battery Life: Approximately 16 hours.
Warm-up Time: 10 seconds.

Pre-programmed gases: (partial listing) CFCs: R11, R12, R13, HCFCs: R22, R502, R500, HFCs: R134a, R123, R125, R23, and other halogen based compounds.
Alarm Settings: Audio: adjustable tick rate, Visual: flashing LED.
Probe: 15-3/4″ (40 cm) length, flexible gooseneck.
Dimensions: 7.3″H x 3.4″W x 1.4″D (18.5 x 8.5 x 3.4 cm).
Weight: 18 oz (500 g).
Agency Approvals: CE.

Dwyer®

Model 472A-1

Dual Input Thermocouple Thermometer
Accepts J, K, T Thermocouples, Differential Temperature Indication

CE

1-5/16 [33.52]
2-13/16 [71.56]
7-1/16 179.32
2-19/32 [65.79]
1-9/64 [29.08]
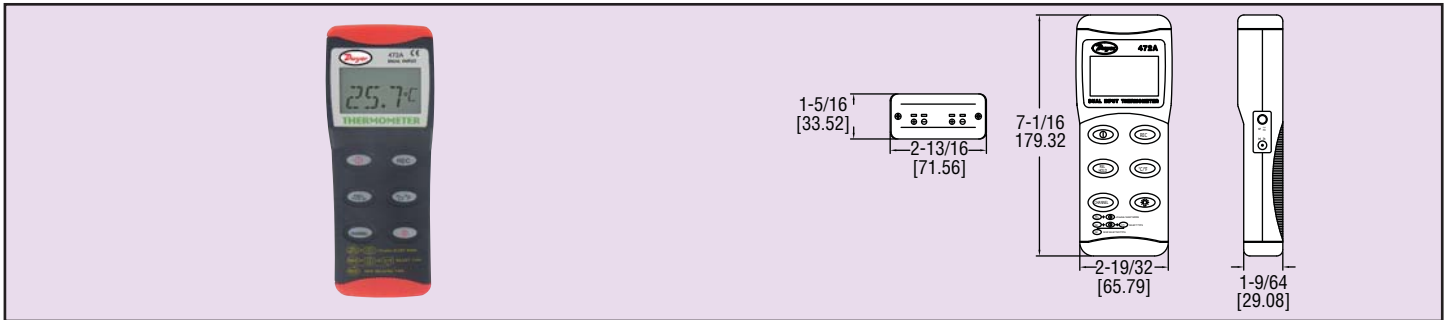
The Model 472A-1 Dual Input Thermocouple Thermometer precisely measures up to two temperature measurements simultaneously. The large LCD display shows both temperature inputs or one temperature input and the differential temperature. Any J, K, or T type thermocouple with a mini-jack connector can be used as an input. For viewing in poorly lit environments, the built-in back light brightens the display. A hold button allows the user to freeze temperature data displayed. Minimum and maximum readings can be recorded over a set time period. Model 472A-1 includes a hard carrying case, battery, and one K type thermocouple.

Model 472A-1, Digital Input Thermocouple Thermometer

ACCESSORIES
472A-B, Rubber boot
1818-0074, Immersion probe
1818-0078, Penetration probe
1818-0082, Surface probe
1818-0085, Air duct probe
1718-0077, Remote probe handler

SPECIFICATIONS
Inputs: Type J, K, T thermocouples.
Power Requirements: 9 V battery.
Ranges:
   J-type: -328 to 1400°F (-200 to 760°C);
   K-type: -328 to 2498°F (-200 to 1370°C);
   T-type: -328 to 734°F (-200 to 390°C).
Accuracy: ±0.1% reading + 1.4°F (0.7°C).
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits (Non-Condensing): 0 to 85% relative humidity.
Display: Triple LCD display.
Resolution: 0.1°C up to 500°C.
Weight: 23.6 oz.
Agency Approval: CE.

Dwyer®

Model DKT-1

Pocket-Size Thermocouple Thermometer
Selectable °F/°C, Accepts Mini-Plug Input

CE

1-45/64 [43.26]
51/64 [20.24]
3-5/64 [78.18]
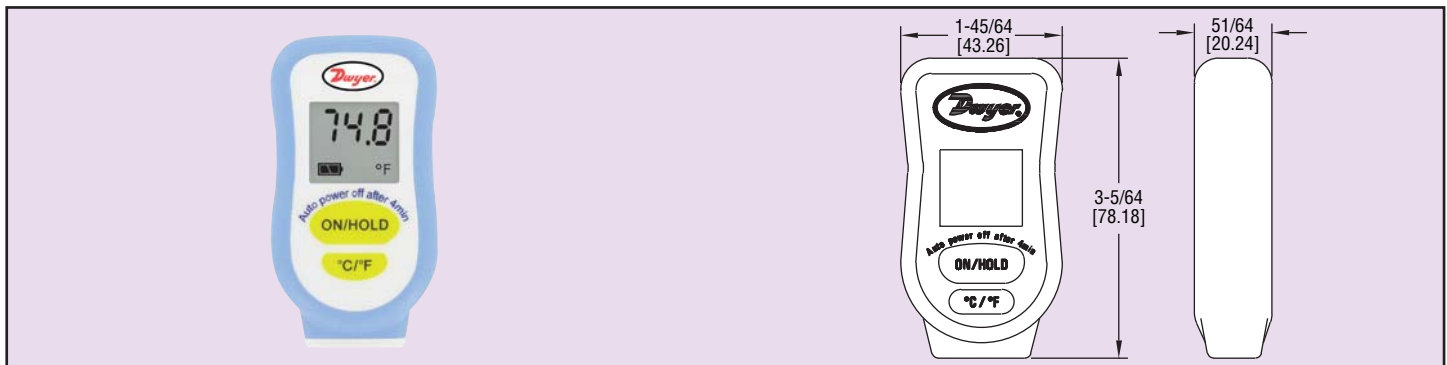
The Model DKT-1 Pocket-Size Thermocouple Thermometer accurately monitors temperatures in a variety of applications. The wide measurement range and selectable engineering units allow users to easily view readings in either °F or °C. The automatic power down feature conserves battery life. This compact thermometer accepts any K-type thermocouple sensors (sold separately) with mini-plug connectors.

Model DKT-1, Thermocouple Thermometer

ACCESSORIES
1818-0074, Immersion Probe
1818-0078, Penetration Probe
1818-0082, Surface Probe
1818-0085, Air Duct Probe

SPECIFICATIONS
Measurement Range: -83.2 to 1999°F (-64 to 1400°C).
Operating Temperature: 32 to 122°F (0 to 50°C).
Accuracy: ± 1% of reading or 1.8°F (1.0°C).
Probe Connection: K type mini-jack.
Resolution: 0.1°F/°C.
Battery Life: CR2032 lithium battery - estimated 100 hours continuous use.
Weight: 1.42 oz (40.15 g).
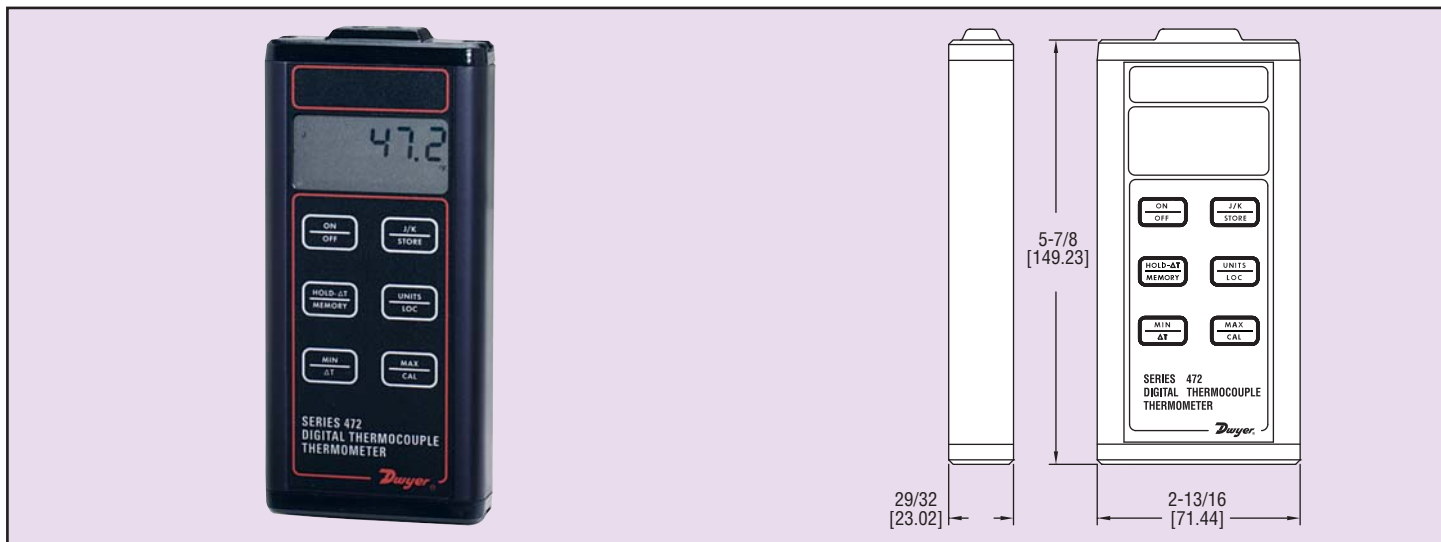**Agency Approvals:** CE.

TEST EQUIPMENT

Thermometers, Thermocouple

Dwyer®

Digital Thermocouple Thermometer

Differential or Relative Temperature Readings, Stores Up to 25 Readings

5-7/8
[149.23]

29/32
[23.02]

2-13/16
[71.44]

The Series 472 Digital Thermocouple Thermometer is a precision general purpose thermometer designed for use with Type J or Type K thermocouples that can be field calibrated. A standard ANSI thermocouple connector allows the use of a wide variety of probe styles. The unit records and displays minimum and maximum temperature readings and has a 20 minute auto power off to conserve the battery. The 4-1/2 digit LCD is backlit for dark or low light conditions.

FEATURES
• High accuracy temperature measurement using Type J and Type K thermocouples.
• Measures in degrees Fahrenheit or degrees Celsius.
• Selectable resolution for readings in degree or in 0.1 degree increments.
• Differential or relative temperature measurement using the Δ mode.
• Stores and recalls up to 25 temperature measurements in either normal or Δ mode.

Model 472, Digital Thermocouple Thermometer

SPECIFICATIONS
Probe Types: Type J and K thermocouples.
Probe Connection: ANSI female mini-connector.
Input Protection: 50V rms.
Temperature: Range: J: -350 to 2192°F (-210 to 1200°C); K: -418 to 2500°F (-250 to 1372°C); Accuracy: 0.1% of reading ±0.7°F/0.4°C (> -150°C); 0.1% of reading ±2°F/1°C (< -150°C); Resolution: 0.1° (below 1999°).
Linearization: Conforms to NIST monograph 175 revised to ITS-90.
Operating Conditions: Stated accuracy: 64 to 82°F (18 to 28°C); Operating ambient temperature: 14 to 104°F (-10 to 40°C); Storage temperature: -40 to 176°F (-40 to 80°C).
Display: Dual 4-1/2 digit LCD.
Battery: 9V alkaline.
Battery Life: 200 hours (typical).
Memory: 25 samples (normal or DT mode).
Housing Size: 6-9/16″ H x 2-13/16″ W x 29/32″ D (166 x 71 x 23 mm).

A-402A CARRYING CASE — Tough gray nylon pouch protects any Series 472 Thermometer. Double zippered for quick and easy access. With belt loop that snaps closed.

72″H x 3″W x 24″D (191 x 76 x 57 mm)

Dwyer®

Digital Thermocouple Thermometer Kits

Accepts Type J or K Thermocouples

Complete kits include:
• Master probe handle
• Surface, air duct, immersion and bare tip probes
• 9V battery
• High accuracy Series 472 Digital Thermocouple Thermometer that measures temperature using Type J or Type K thermocouples

Features of the Series 472 unit include:
• Measurement in °F or °C
• Selectable resolution for readings in degree or in 0.1 degree increments
• Differential or relative temperature measurement using the Δ mode
• Stores and recalls up to 25 temperature measurements in either normal or Δ mode

Model 472-2-KIT with Type K Thermocouple
Model 472-3-KIT with Type J Thermocouple

Hand Held Thermocouples

Description

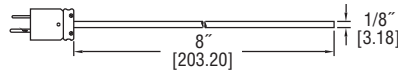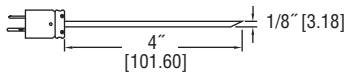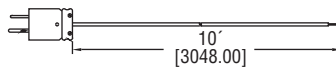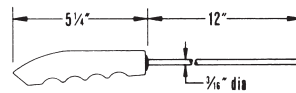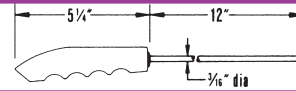|		T/C Type	Model
Master Probe Handle - Probes plug into the master probe handle. The handle has a mini-jack at one end and a coiled cable with mini-plug on the other. Individual probes may be connected to allow easy reach to your process.		J	**1718-0076**
		K	**1718-0077**
Immersion Probe - This general purpose probe can be used in liquids and gases. Includes mini plug.	8″ [203.20] · 1/8″ [3.18]	J	**1818-0073**
		K	**1818-0074**
Penetration Probe - Used for penetrating meat, plastic, rubber, asphalt, or other semi-soft materials. Includes mini plug.	4″ [101.60] · 1/8″ [3.18]	J	**1818-0077**
		K	**1818-0078**
Surface Probe - For flat or semi-flat surfaces of metal, paper or plastic. Small gauge spring contoured tip allows fast response. Includes mini plug.	1/8″ [3.18] · 8″ [203.20] · 1/2″ [12.70]	J	**1818-0081**
		K	**1818-0082**
Air Duct Probe - Measures temperature in ducts for air or compatible gases, environmental chambers, ovens, rooms, etc. Perforated shield has good air flow and prevents heating by radiation. Includes mini plug.	1/8″ [3.18] · 8″ [203.20] · 7/16″ [11.11] 9/16″ [14.29] 1-5/8″ [41.28]	J	**1818-0084**
		K	**1818-0085**
Exposed Junction Probe - Small gauge tip allows high sensitivity and quick response. The thermocouple junction is exposed for readings in air or compatible gases. Includes mini plug.	4″ [101.60] · 1/16″ [1.59]	J	**1818-0088**
		K	**1818-0089**
Needle Probe - Small diameter penetrating probe gives fast response in soft materials and liquids. Made with mineral insulated sheath for extra durability. Includes mini plug.	4″ [101.60] · 1/16″ [1.59]	J	**1818-0092**
		K	**1818-0093**
Bare Tip Probe - This probe consists of 10 feet of 24 gauge wire with fiberglass braided cable and a bare wired junction. Shipped with a spool for easy storage. Includes mini plug.	10′ [3048.00]	J	**1558-0030**
		K	**1558-0013**
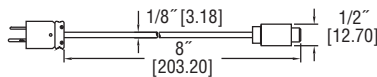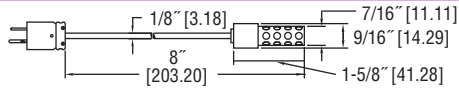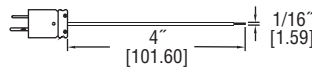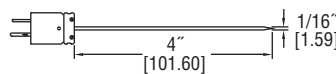
Integral Handle Probes - Featuring fixed handles and coiled cords, these rugged hand-held probes will plug into any device with a mini-jack.

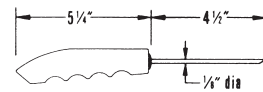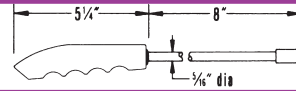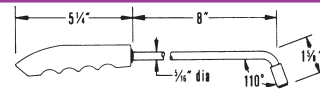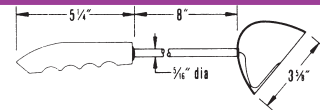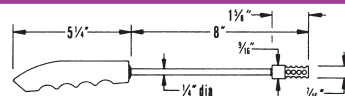|		T/C Type	Model
General Purpose Probe - Featuring a built-in handle with coiled cord and mini-plug, this general purpose probe can be used in liquids and air compatible gases. For use to 800°F.	5¼″ · 12″ · 3/16″ dia	J	**1718-0001**
		K	**1718-0002**
High Temperature General Purpose Probe - Featuring a built-in handle with coiled cord and mini-plug, this general purpose probe can be used in liquids and air compatible gases. For use to 1600°F.	5¼″ · 12″ · 3/16″ dia	J	**1718-0005**
		K	**1718-0006**
Penetration Probe - Featuring a built-in handle with coiled cord and mini-plug, this probe is used for penetrating meat, plastic, rubber, asphalt, or other semi-soft materials.	5¼″ · 4½″ · 1/8″ dia	J	**1718-0014**
		K	**1718-0015**
Straight Surface Probe - Featuring a built-in handle with coiled cord and mini-plug, this probe is used for flat or semi-flat surfaces of metal, paper or plastic. Small gauge spring contoured tip allows fast response.	5¼″ · 8″ · 3/16″ dia	J	**1718-0008**
		K	**1718-0009**
Angled Surface Probe - Featuring a built-in handle with coiled cord and mini-plug, this probe is used for flat or semi-flat surfaces of metal, paper or plastic. Small gauge spring contoured tip allows fast response.	5¼″ · 8″ · 3/16″ dia · 110° · 1⅛″	J	**1718-0011**
		K	**1718-0012**
Round Surface Probe - Featuring a built-in handle with coiled cord and mini-plug, this probe measures temperature in ducts for rollers, convex surfaces. Spring stainless steel replaceable band stretched across C-shaped bow.	5¼″ · 8″ · 3/16″ dia · 3⅛″	J	**1718-0022**
		K	**1718-0023**
Air Duct Probe - Featuring a built-in handle with coiled cord and mini-plug, this probe measures temperature in ducts for air or compatible gases, environmental chambers, ovens, rooms, etc. Perforated shield allows good air flow and prevents heating by radiation.	5¼″ · 8″ · 1⅜″ · 3/16″ · ¼″ dia · 1/8″	J	**1718-0018**
		K	**1718-0019**

Dwyer®

Model WT-10

Waterproof Thermometer

Stainless Steel Stem, Selectable °F or °C, Max/Min Recall, Auto Off

CE

WT-10

13/16 [20.32]

45/64 [17.78]

5-57/64 [149.86]
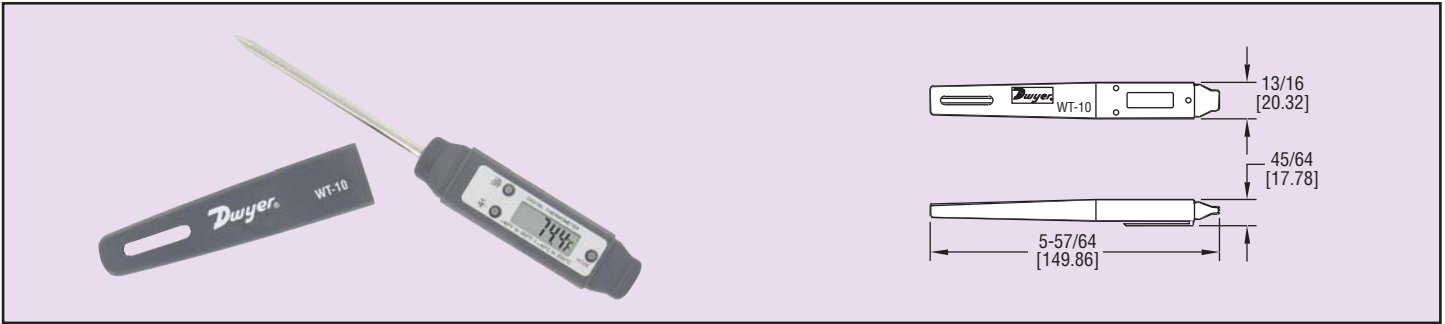
Completely submersible, the pocket size Model WT-10 Waterproof Thermometer is designed with a waterproof housing and a 2.75″ (70 mm) stainless steel stem. The unit offers dual scale temperature measurements up to 392°F (200°C) on the 3-digit LCD display. The WT-10 comes complete with protective cover to store the unit while not in use. The features include MAX/MIN recall of high and low temperatures, hold, switchable °F or °C and auto shut off. Ideal applications include laboratory, food and beverage, HVAC and scientific markets.

Model WT-10, Waterproof Thermometer

SPECIFICATIONS
Temperature Range: -40 to 392°F (-40 to 200°C).
Accuracy: ±2°F (±1°C) from -14 to 212°F (-26° to 100°C); all other temperature ranges ±3°F (±2°C).
Display: 3-digit LCD.
Resolution: 0.1°F/°C.
Response Time: 1 second.
Power Requirements: One 1.5V button style battery (included).
Battery Life: Approximately 1 year.
Construction: 2.75″ (70 mm) stainless steel pointed stem and ABS waterproof housing.
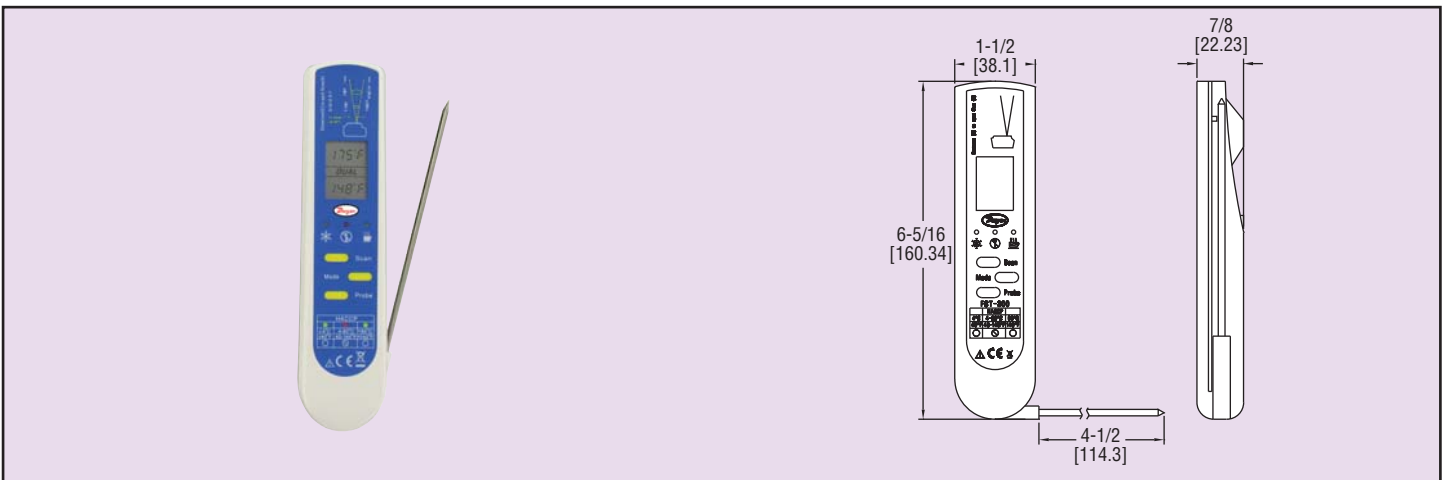**Weight:** 0.7 oz (20 g).
Agency Approvals: CE.

Dwyer®

Model FST-300

Food Service Infrared Thermometer

HACCP Zone Display, In Contact Thermocouple Probe, Perfect for Food Service and Inspection

CE

1-1/2 [38.1]

7/8 [22.23]

6-5/16 [160.34]

4-1/2 [114.3]

The Model FST-300 Infrared Thermometer is designed to monitor temperatures in the food service industry. The thermometer has both an infrared sensor and an immersion probe to safely monitor surface and product temperatures. The quick HACCP zone display gives visual indication when products are within a safe storage temperature range for both hot and cold food products. The Model FST-300 also has a built-in white light to illuminate the measurement area.

Model FST-300, Food Service Thermometer

SPECIFICATIONS
Range: Infrared Sensor: -67 to 482°F (-55 to 250°C); Probe Sensor: -67 to 626°F (-55 to 330°C).
Ambient Operating Temperature: 32 to 122°F (0 to 50°C).
Accuracy: ±1.1°F (0.5°C).
Display: Two line 3 digit LCD.

Resolution: 0.5°F (0.2°C).
Distance to Target: 2.5:1 optics ratio.
Emissivity Range: 0.95 default – adjustable 0.1 to 1.0.
Battery Life: 18 hours continuous use (auto power off after 15 seconds).
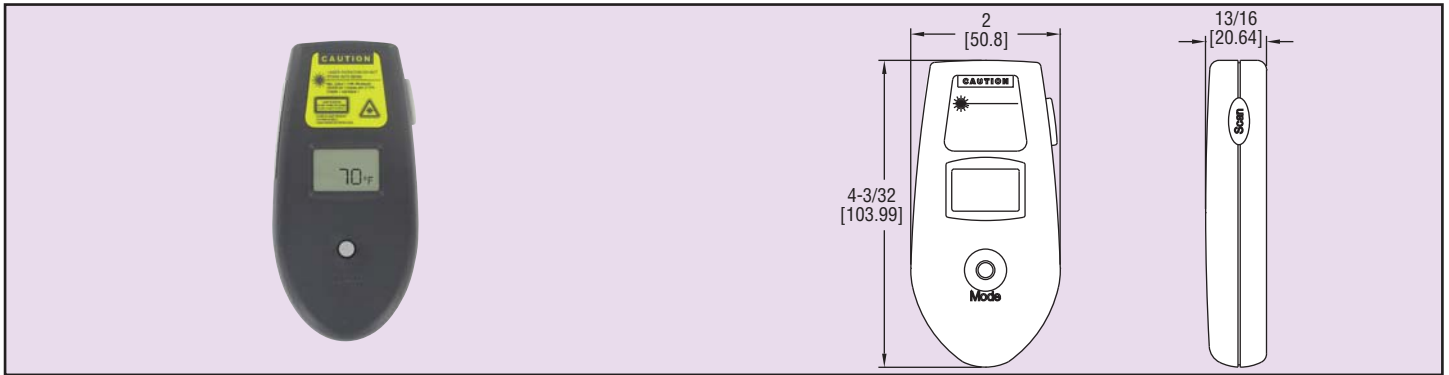**Weight:** 3.5 oz (98.1 g).
Agency Approvals: CE.

Model MIT — Miniature Infrared Non-Contact Thermometer

Dwyer®

Miniature Infrared Non-Contact Thermometer
6:1 Distance-to-Target Ratio with Laser Sighting

CE

The Model MIT Miniature Infrared Temperature Thermometer is the ultimate portable infrared solution. This unit has features such as MIN and MAX temperature, adjustable emissivity, battery life indicator, and laser sighting. This affordable thermometer also has a 6 to 1 distance to target ratio in key chain size housing.

Model MIT, Miniature Infrared Non-Contact Thermometer

SPECIFICATIONS
Measurement Range: -67 to 482°F (-55 to 250°C).
Operating Range: 32 to 122°F (0 to 50°C).
Accuracy: 2% of reading or 4°F (2°C), whichever is greater.
Resolution: 0.1°F/0.1°C (switchable).
Response Time: 1 second.
Distance To Target: 6:1 optics ratio.
Emissivity Range: 0.95 default – adjustable 0.05 to 1.00 emissivity.
Battery Life: Typical 40 hours of continuous use (auto power off after 15 seconds). (2) CR2032 batteries included.
Weight: 2.29 oz (65 g) including batteries.
Agency Approvals: CE.

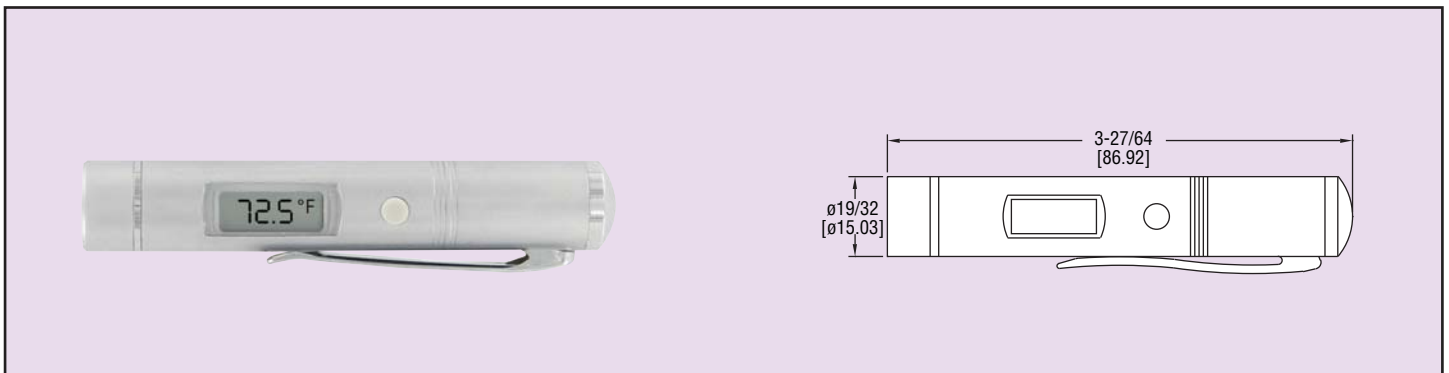## Model PIT — Pocket Size Infrared Thermometer

Dwyer®

Pocket Size Infrared Thermometer
1:1 Distance to Target Ratio, Pocket Clip

CE

The Model PIT Pocket Size Infrared Thermometer is the most portable infrared thermometer on the market. The sturdy mounting clip can be attached to any pant or shirt pocket. The Model PIT can be field selected to read in °F or °C. The compact size and single button operation allow users to take quick accurate temperature readings.

Model PIT, Pocket Size Infrared Thermometer

SPECIFICATIONS
Measurement Range: -27 to 428°F (-33 to 220°C).
Accuracy: ±2%.
Resolution: 0.1°F or °C.
Distance to Target Ratio: 1:1.
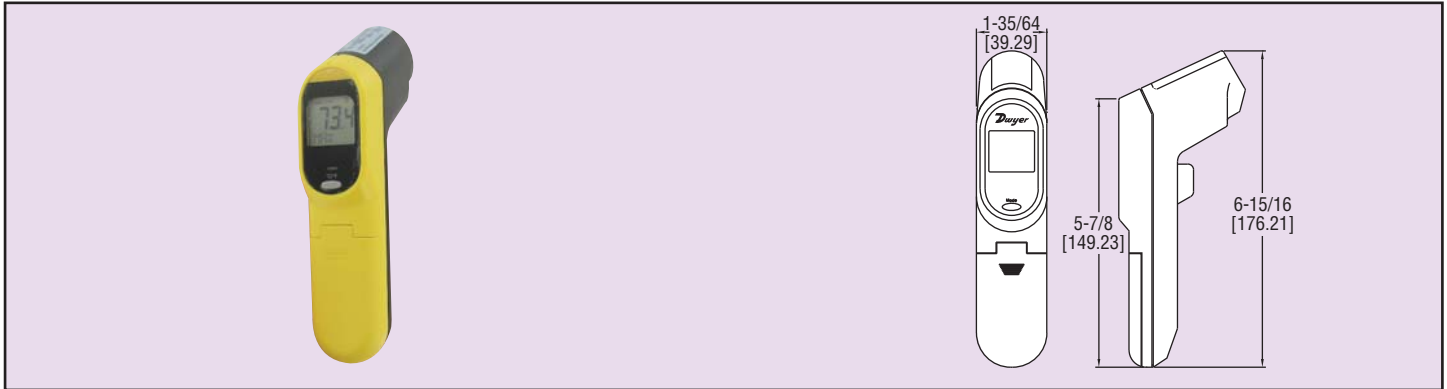**Emissivity:** Fixed at 0.95.
Weight: 4 oz (113.4 g).
Agency Approvals: CE.

TEST EQUIPMENT

Thermometers, Infrared

Model IR2 Infrared Non-Contact Thermometer

12:1 Distance-to-Target Ratio, Laser Sighting

CE

1-35/64 [39.29]

6-15/16 [176.21]

5-7/8 [149.23]

The Model IR2 Infrared Temperature Thermometer allows users to economically take accurate measurements in hard to reach areas. Measurements can be taken at a safe distance with a 12:1 Distance to Target Ratio. The IR2 easily takes measurements within 2% accuracy using a built-in laser sighting. The fixed emissivity of 0.95 is perfect for measuring surface temperatures of concrete, asphalt, rubber or oxidized metals. Besides reading the process temperature, the back lit display also reads the maximum temperature seen. Excellent for monitoring surface temperatures of air ducts, boilers, engines or light fixtures.

Model IR2, Infrared Temperature Thermometer

SPECIFICATIONS
Measurement Range: -76 to 932°F (-60 to 500°C).
Operating Range: 32 to 122°F (0 to 50°C).
Accuracy: 2% of reading or 4°F (2°C), whichever is greater.
Resolution: 0.1°F/0.1°C.
Response Time: 1 second.
Distance to Target: 12:1.
Emissivity: 0.95 fixed.
Battery Life: 2 AAA, 180 hours continuous use (auto power off after 15 seconds).
Weight: 3.61 oz (102 g).
Agency Approvals: CE.

Dwyer®

Model IR3 & IR4 Infrared Temperature Thermometer

Up to 20:1 Distance-to-Target Size Ratio, Thermocouple Input

CE

IR3   IR4

1-35/64 [39.29]

6-15/16 [176.21]

5-7/8 [149.23]

The Model IR3 and IR4 Infrared Thermometers utilize infrared technology for precise, non-contact temperature measurement. For standard applications, the 12:1 distance to target ratio on the IR3 provides accurate measurements within 2% of reading. When measuring smaller objects or at greater distances, the 20:1 distance to target ratio of the IR4 can provide measurements within 1% of reading. Both models have single point laser sighting for aligning the beam to the target. In addition, both models can display maximum, minimum, differential and average temperature measurements. Adjustable emissivity allows the thermometers to measure the temperature of most surfaces without any external calculations. A K-type thermocouple can plug into the handle of the thermometers in order to take surface and internal temperatures simultaneously. Audible alarms can be used to for safety checks.

Model IR3, Infrared Temperature Thermometer
Model IR4, Infrared Temperature Thermometer

SPECIFICATIONS
Measurement Range: -76 to 932°F (-60 to 500°C).
Operating Range: Ambient: 32 to 122°F (0 to 50°C).
Accuracy: IR3: ±2% of reading or 4°F (2°C); IR4: ±1% of reading or 1.8°F (1°C), whichever is greater.
Resolution: 0.1°F/0.1°C.
Response Time: 1 second.
Distance to Target: IR3: 12:1; IR4: 20:1.
Emissivity Range: 0.95 adjustable; 0.5-1.0.
Additional Input: Type K.
Battery Life: 2 AAA. 180 hours (without laser or LCD backlight).
Weight: 6.3 oz (179 g) with batteries.
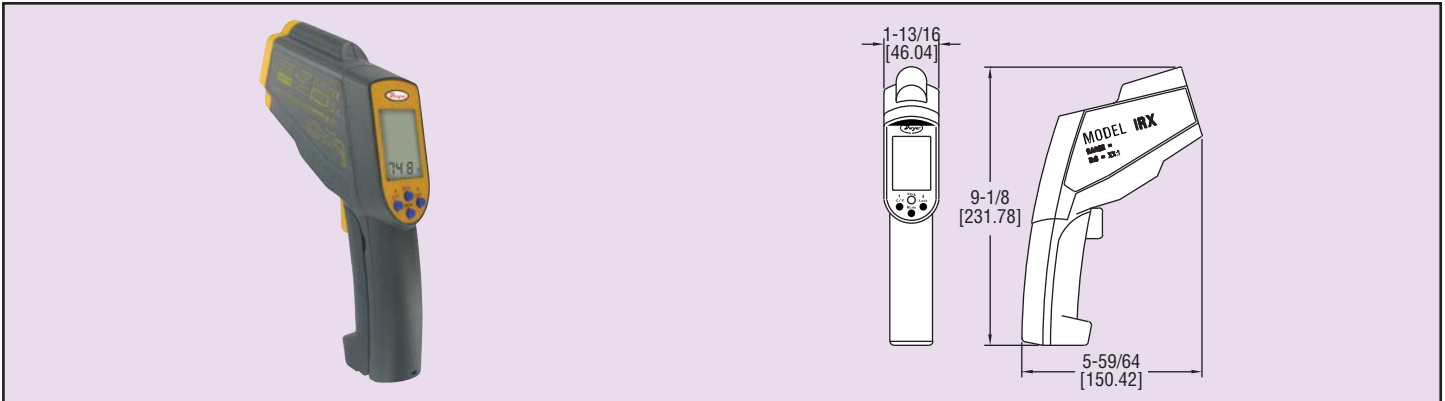**Agency Approvals:** CE.

Dwyer®

Series IR6/IR7
Dual Laser Extended Range Infrared Thermometer
Up to 50:1 Distance to Target Ratio

C€

The **Series IR6/IR7 Dual Laser Extended Range Infrared Thermometer** is ideal for accurately measuring surface temperatures from long distances. This feature packed handheld device allows the user to read the maximum, minimum, average, and differential readings. The high and low alarms give audible and visual indication of the process temperature. When taking measurements in dark areas, a built-in white light can be used to illuminate the measurement area. For long term measurements, the unit includes a dual magnetic base attachment that allows hands-free measurements.

Model	Distance to Target Ratio	NIST
IR6	30:1	No
IR7	50:1	No
IR6-NIST	30:1	Yes
IR7-NIST	50:1	Yes

SPECIFICATIONS
Measurement Range: IR6: -76 to 1600°F (-60 to 900°C); IR7: -76 to 1832°F (-60 to 1000°C).
Operating Range: 32 to 122°F (0 to 50°C).
Accuracy: ±2% of readings or 4°F (2°C) whichever is greater.
Resolution: 0.1°F (0.1°C).
Response Time: 1 second.
Distance to Target: IR6: 30:1; IR7: 50:1.
Emissivity: 0.95 default – adjustable 0.10 to 1.00 in 0.01 steps.
Battery Life: 2 AAA, 180 hours continuous use.
Units: User selectable F or C.
Weight: 13.62 oz (386.1 g).
Agency Approvals: CE.

Dwyer®

Model IRM20
Noncontact Infrared Thermometer
6:1 Distance-to-Target Size Ratio, Selectable °F or °C, Laser Sighting

C€

The economical, handheld Model IRM20 Noncontact Infrared Thermometer is compact, rugged and easy to use—just aim, push the button, and read current surface temperatures in less than a second. Hot, hazardous, or hard-to-reach objects are safely measured without contact. The unit has a wide temperature range from 0 to 500°F (-18 to 260°C) and a distance-to-spot size ratio of 6:1. The LCD shows temperatures in switchable °F or °C, holds the reading for 7 seconds after the button is released and indicates when the battery is low. The IRM20 is ideal for industrial, electrical, heating and air conditioning, automotive and food safety.

Model IRM20, Noncontact Infrared Thermometer

SPECIFICATIONS
Measurement Range: 0 to 500°F (-18 to 260°C).
Operating Range: Ambient: 32 to 120°F (0 to 50°C).
Accuracy: ±2% of reading or ±3.5°F (±2°C) whichever is greater for targets at 30 to 500°F (-1 to 260°C); ±5°F (±3°C) for targets at 0 to 30°F (-18 to -1°C).
Repeatability: ±2% of reading or ±3°F (±2°C).
Resolution: 1°F/°C.
Response Time: 500 ms, 95% response.
Distance-to-Target: 6:1.
Emissivity: Fixed 0.95.
Battery: One 9V battery. 12 hours continuous use.
Storage Temperature: -4 to 150°F (-20 to 65°C) without battery.
Relative Humidity: 10-95% RH noncondensing up to 86°F (35°C).
Spectral Response: 7-18 μm.
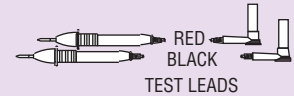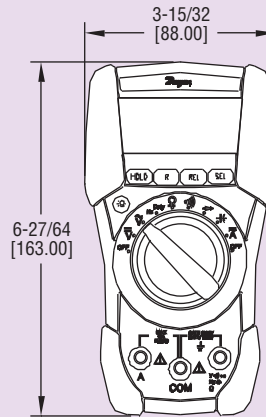**Weight:** 0.5 lb (227 g).
Agency Approvals: CE.

TEST EQUIPMENT

Thermometers, Infrared

Dwyer®

Digital Auto-Range Multimeter

Measures DC/AC Voltage, DC/AC Current, Resistance, Frequency, Capacitance

3-15/32 [88.00]

6-27/64 [163.00]

RED
BLACK
TEST LEADS

Our compact, low cost **Model MM-1 Digital Auto-Range Multimeter** is ideal for general electrical testing and troubleshooting. This full function multimeter measures DC and AC voltage to 600 V, DC and AC current to 10 A and resistance to 400 Ω. In addition to volts, amps and ohms, this meter includes audible continuity, diode, LED and transistor hFE tests. The rotary switch allows you to select from any of the functions quickly and easily. The 4 digit backlit LCD features value, mode, and low battery indication. The rugged, high impact case is double injected for excellent strength and durability. The Model MM-1 is furnished with black and red test leads, two AAA batteries and carrying case with belt loop.

Model MM-1, Digital Auto-Range Multimeter

SPECIFICATIONS
Overvoltage Category: CAT IV 600 V, CAT III 1000 V.
DC Voltage: 0.1 mV to 600 V (0.8% + 2 digit).
AC Voltage: 0.001 V to 600 V (0.8% + 3 digit).
DC Current: 0.01 A to 10 A (1.2% + 3 digit).
AC Current: 0.01 A to 10 A (1.2% + 3 digit).
Resistance: 400, 4K, 40K, 400K, 4M, 40M ± (1.0% + 2 digit).

Protection: 600 Vrms.
Continuity Test: Audible buzzer.
Frequency: 0.01 Hz to 99.99 kHz.
Duty Cycle: 20 to 80% ± (1.0% + 5 digit).
Capacitance: 5n, 50n, 500n, 5u, 50u, 100uF ± (3% + 5 digit).
Display: Backlit, 4000 counts plus decimal point.
Sampling Rate: 2.5 x per s.
Power Requirements: 2 AAA batteries.
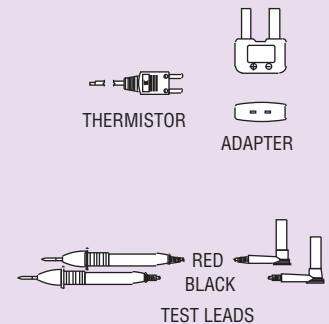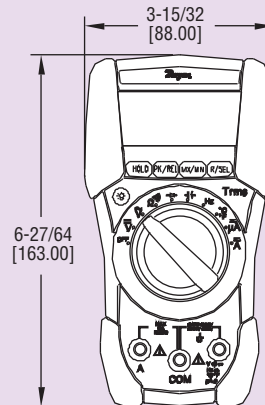**Weight:** 23.5 oz (666 g).

Dwyer®

Digital Multimeter with True RMS

Measures DC/AC Voltage, DC/AC Current Resistance, 4000 Count Digital Display

3-15/32 [88.00]

6-27/64 [163.00]

THERMISTOR

ADAPTER

RED
BLACK
TEST LEADS

Our compact, low cost **Model MM-2 Digital Multimeter with True RMS** is ideal for general electrical testing and troubleshooting. This full function multimeter measures DC voltage to 1000 V and AC voltage to 750 V, DC and AC current to 10 A and resistance to 400 Ω. In addition to volts, amps and ohms, this meter includes audible continuity, diode, LED and transistor hFE tests. The rotary switch allows you to select from any of the functions quickly and easily. The 4 digit backlit LCD features value, mode, and low battery indication. The rugged, high impact case is double injected for excellent strength and durability. The Model MM-2 is furnished with black and red test leads, 9 V battery, thermistor with input adapter, and carrying case with belt loop.

Model MM-2, Digital Multimeter with True RMS

SPECIFICATIONS
Overvoltage Category: CAT IV 600 V, CAT III 1000 V.
DC Voltage: 0.1 mV to 1000 V (0.5% + 2 digit).
AC Voltage: 0.1 mV to 750 V (1.3% + 5 digit).
DC Current: 0.1 uA to 10 A (1.0% + 3 digit).
AC Current: 0.1 uA to 10 A (1.5% + 5 digit).
Resistance: 400, 4K, 40K, 400K, 4M, 40M ± (1.0% + 2 digit).

Protection: 1000 Vrms.
Continuity Test: Audible buzzer.
Frequency: 1 Hz to 40 MHz.
Capacitance: 4n, 40n, 400n, 4u, 40u, 400u, 4m, 40mF ± (1% + 5 digit).
Temperature: -40 to 1382°F (-40 to 800°C).
Display: Backlit with bar graph. 4000 counts plus decimal point.
Sampling Rate: 2.5 x per s.
Power Requirements: 9 V battery.
Weight: 23.5 oz (666 g).

TEST EQUIPMENT

Multimeters

Dwyer®

Model MM10

Digital Multimeter

Measures DC /AC Voltage, DC Current and Resistance, Overload Protection

CE

2-3/4 [69.85]

5 [127]

1 [25.4]

Our compact, low cost Model MM10 Digital Multimeter is ideal for general electrical testing and troubleshooting. This full function multimeter measures DC and AC voltage to 600V, DC current to 10A and resistance to 20MΩ. In addition to volts, amps and ohms, this meter includes audible continuity, diode, LED and transistor hFE tests. The 3-1/2 digit LCD features automatic polarity correction, low battery and overload indication. Rugged, high impact case comes equipped with built-in tilt-stand for versatile, hands-free operation. Overload protected to 600VAC/600VDC for voltage ranges and to 500VAC/500VDC for resistance, diode and continuity test ranges. Current ranges are protected by 0.5A/250V, replaceable fuse. Multimeter is furnished with 22″ test leads, 9V battery and instruction manual.

Model MM10, Digital Multimeter

SPECIFICATIONS
DC VOLTAGE
Ranges: 2V, 20V, 200V, 600V.
Resolution: 1 mV, 10 mV, 100 mV, 1V.
Accuracy: 2V: ±(0.5% + 1 digit); 20 to 600V: ±(1.5% + 1 digit).
AC VOLTAGE
Ranges: 200V, 600V.
Resolution: 100mV, 1V.
Accuracy: 200V: ±(2% + 3 digits); 600V: ±(2.5% + 3 digits).
RESISTANCE
Ranges: 200Ω, 2kΩ, 20kΩ, 200kΩ, 2MΩ, 20MΩ.
Accuracy: 200Ω: ±(2% + 2 digits); 2kΩ to 2MΩ: ±(1.5% + 2 digits); 20MΩ: ±(2.5% + 2 digits).
DC CURRENT
Ranges: 2 mA, 20 mA, 200 mA, 10A.
Resolution: 1µA, 10µA, 100µA, 10 mA.
Accuracy: 2 to 200 mA: ±(1.5% + 1 digit); 10A: ±(2% + 1 digit).

CONTINUITY TEST
Range: < 30Ω.   **Resolution:** 0.1Ω.
DIODE TEST
Resolution: 1 mV.
Test Current: 1 mA.
TRANSISTOR (hFE) TEST
Type: NPN, PNP.
Range: 0-1000.
LED TEST
Test Voltage: < 3V.
Range: 1.5 - 3V.
GENERAL
Display: 3-1/2 digit LCD with a maximum reading of 1999.
Sampling Rate: 2.5 times per second.
Ambient Operating Temperature: 32 to 104°F (0 to 40°C), 0 to 80% RH.
Storage Temperature: 14 to 140°F (-10 to 60°C), 0 to 80% RH.
Power Requirements: One 9V battery.
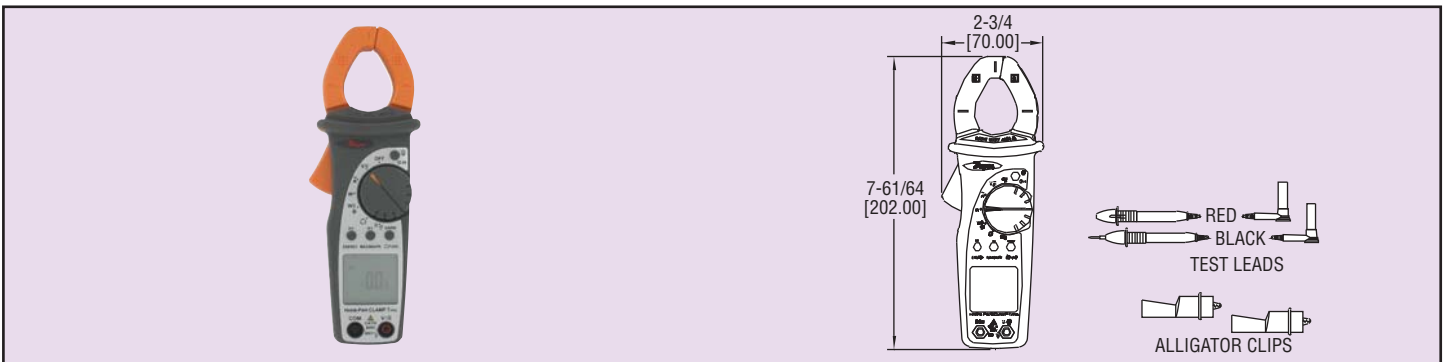**Battery Life:** 150 hrs. approx.
Weight: 5.2 oz (150 g).
Agency Approvals: CE.

Dwyer®

Model CM-3

Digital Clamp Meter with True RMS, Peak Hold and Min/Max

Measures DC/AC Voltage, DC/AC Current, Energy, Resistance

2-3/4 [70.00]

7-61/64 [202.00]

RED
BLACK
TEST LEADS

ALLIGATOR CLIPS

Our compact, low cost Model CM-3 Digital Clamp Meter is ideal for general electrical testing and troubleshooting. A few applications include HVAC, automotive, electrical/power, and environmental monitoring uses. The CM-3 measures DC and AC voltage to 600 V, AC current to 4000 A, and resistance to 2000 Ω. The digital clamp meter features data/range hold and auto range buttons to prevent the screen from updating when gathering values, as well as a zero function. Additional features include single and three phase energy measurement, MIN/MAX and average. The 3-3/4 digit backlit LCD features automatic polarity, overload, low battery indication and a bar graph. The Model CM-3 is furnished with red and black test leads, two AAA batteries and a carrying case with belt loop.

Model CM-3, Digital Clamp Meter with True RMS, Peak Hold and Min/Max

SPECIFICATIONS
Over Voltage Category: CAT III 600 V.
AC Voltage: 0.1 V to 600 V ± (1.0% + 3 digit).
DC Voltage: 0.1 V to 600 V ± (1.0% + 3 digit).
AC Current: 0.1 A to 4000 A ± (12.0% + 3 digit).
Resistance: 0.1 to 2000 Ω ± (1.0% + 5 digit).
Continuity Test: Audible buzzer.

Max Conductor Size: 1.18″ diameter (30 mm).
Frequency: 40 Hz to 400 Hz ± (0.5% + 1).
Active Power Range: 0 to 1000 kW ± (3.5% + 3).
Display: Backlit with bar graph. 10,000 counts plus decimal point.
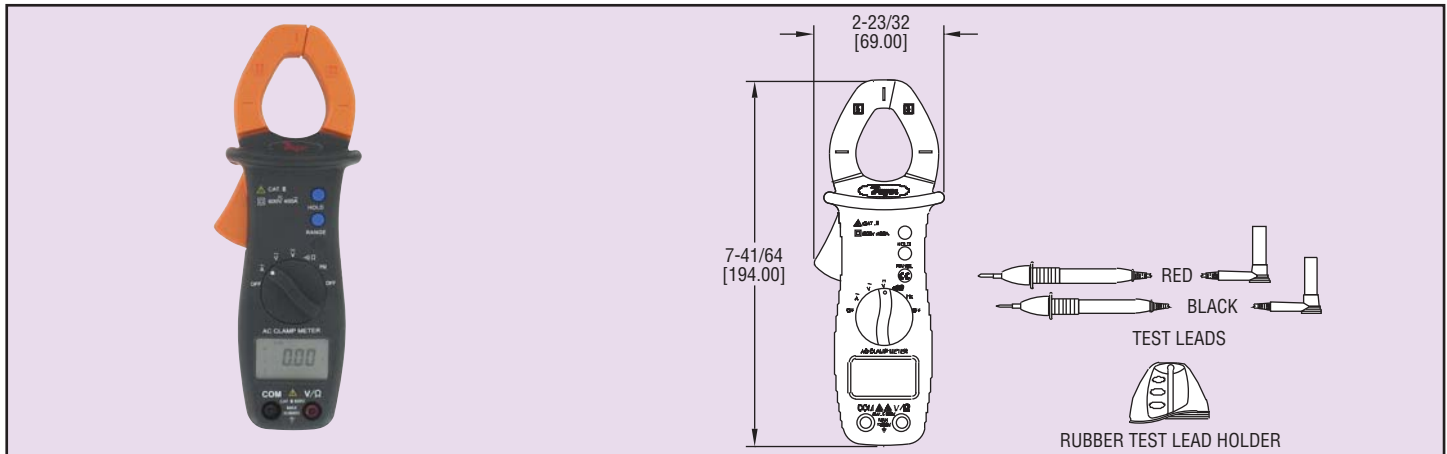**Power Requirements:** 2 AAA batteries.
Weight: 9.88 oz (280 g).

Dwyer®

Model CM-1

Digital Clamp Meter
Measures DC/AC Voltage, AC Current, Resistance, Frequency

2-23/32 [69.00]

7-41/64 [194.00]

RED
BLACK
TEST LEADS

RUBBER TEST LEAD HOLDER

The compact, low cost **Model CM-1 Digital Clamp Meter** is ideal for general electrical testing and troubleshooting. A few applications include HVAC, automotive, electrical/power, and environmental monitoring uses. The digital clamp meter measures DC and AC voltage to 600 V, AC current to 400 A, and resistance to 400 Ω. In addition to volts, amps and ohms, this meter includes a frequency test to 400 Hz. The CM-1 also features data/range hold and auto range buttons to keep the screen from updating when gathering values. The 3-3/4 digit LCD features automatic polarity, overload and low battery indication. The Model CM-1 is furnished with red and black test leads, two AAA batteries and carrying case with belt loop.

Model CM-1, Digital Clamp Meter

SPECIFICATIONS
Over Voltage Category: CAT III 600 V.
AC Voltage: 0.1 V to 600 V ± (1.0% + 5 digit).
DC Voltage: 0.1 V to 600 V ± (1.0% + 3 digit).
AC Current: 0.1 A to 400 A ± (2.0% + 10 digit).
Resistance: 0.1 to 400 Ω ± (1.0% + 5 digit).
Continuity Test: Audible buzzer.
Max. Conductor Size: 1.18″ diameter (30 mm).
Frequency: 0.001 kHz to 400 Hz ± (0.8% + 3).
Display: 4000 counts plus decimal point.
Sampling Rate: 2 x per s.
Power Requirements: 2 AAA batteries.
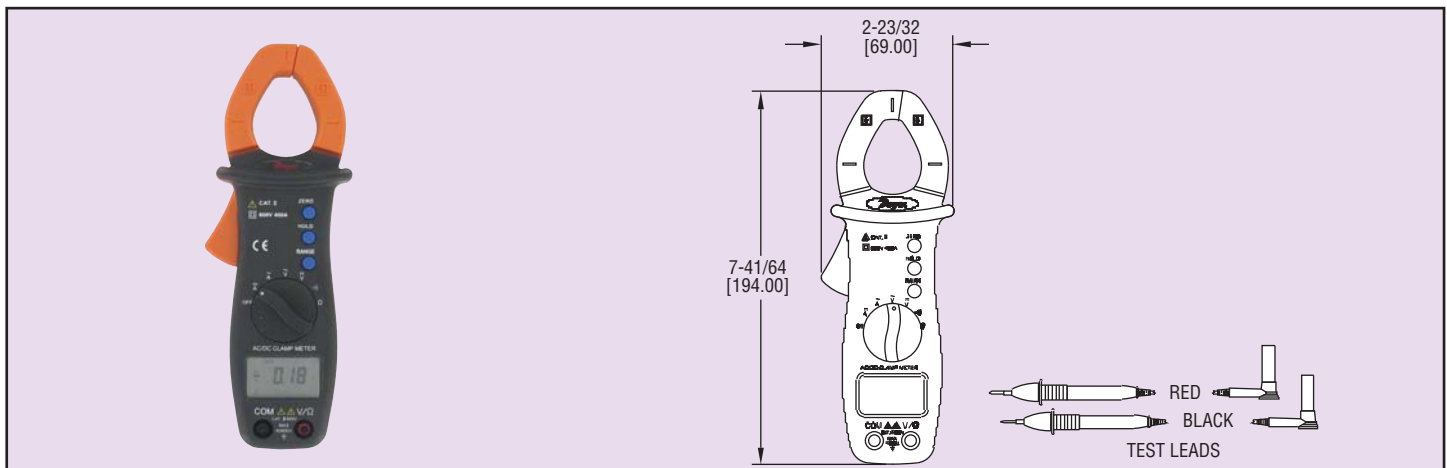**Weight:** 9.88 oz (280 g).

Dwyer®

Model CM-2

Digital Clamp Meter with True RMS
Measures DC/AC Voltage, DC/AC Current, Resistance

2-23/32 [69.00]

7-41/64 [194.00]

RED
BLACK
TEST LEADS

Our compact, low cost **Model CM-2 Digital Clamp Meter with True RMS** is ideal for general electrical testing and troubleshooting. A few applications include HVAC, automotive, electrical/power, and environmental monitoring uses. The Model CM-2 measures DC and AC voltage to 600 V, DC and AC current to 400 A, and resistance to 40 MΩ. The digital clamp meter features data/range hold and auto range buttons to prevent the screen from updating when gathering values, as well as a zero function. The 3-3/4 digit LCD features automatic polarity, overload and low battery indication. The Model CM-2 is furnished with red and black test leads, two AAA batteries and a carrying case with belt loop.

Model CM-2, Digital Clamp Meter with True RMS

SPECIFICATIONS
Over Voltage Category: CAT III 600 V.
AC Voltage: 0.1 mV to 600 V ± (1.0% + 3 digit).
DC Voltage: 0.1 mV to 600 V ± (0.8% + 2 digit).
AC Current: 10 mA to 400 A ± (2.0% + 10 digit).
DC Current: 10 mA to 400 A ± (2.0% + 10 digit).
Resistance: 0.1 to 40 mΩ ± (1.0% + 3 digit).
Continuity Test: Audible buzzer.
Max. Conductor Size: 1.18″ diameter (30 mm).
Display: 4000 counts plus decimal point.
Sampling Rate: 2 x per s.
Power Requirements: 2 AAA batteries.
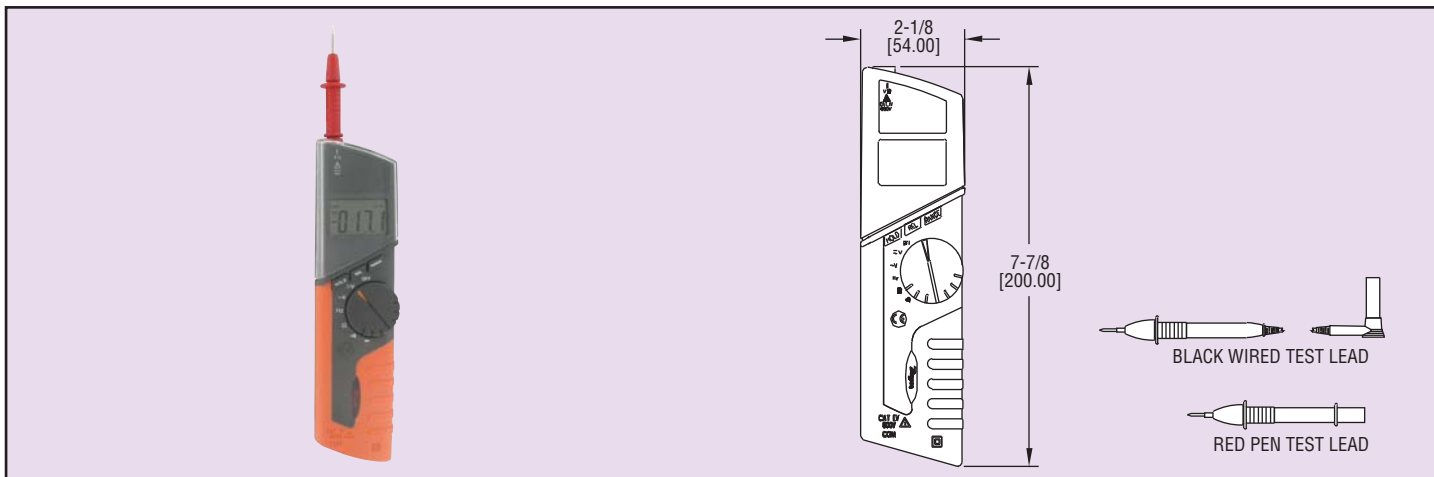**Weight:** 8.64 oz (245 g).

Dwyer®

Model PM-1

Digital Pen Meter
Measures DC/AC Voltage, Resistance, Continuity, Diode, Frequency

2-1/8 [54.00]

7-7/8 [200.00]

BLACK WIRED TEST LEAD

RED PEN TEST LEAD

Our compact, low cost **Model PM-1 Digital Pen Meter** is ideal for general electrical testing and troubleshooting. A few applications include HVAC, automotive, electrical/power, and environmental monitoring uses. This meter measures DC and AC voltage to 600 V and resistance to 40 MΩ. In addition to volts and ohms, the digital pen meter includes continuity, diode, and frequency tests to 10 kHz. This meter features data hold, REL (relative value), and auto range buttons. The 4 digit LCD displays value, mode, and low battery indication. The Model PM-1 is furnished with red and black test leads, two AA batteries and carrying case with belt clip.

Model PM-1, Digital Pen Meter

SPECIFICATIONS
Over Voltage Category:
CAT IV 600 V.
AC Voltage: 1 mV to 600 V ± (1.0% + 3 digit).
DC Voltage: 0.1 mV to 600 V ± (0.8% + 2 digit).
Resistance: 0.1 to 40M ohm ± (1.0% + 3).

Continuity: Audible buzzer.
Diode Test: 1.5 VDC.
Frequency: 0.001 Hz to 10 KHz ± (0.8% + 2).
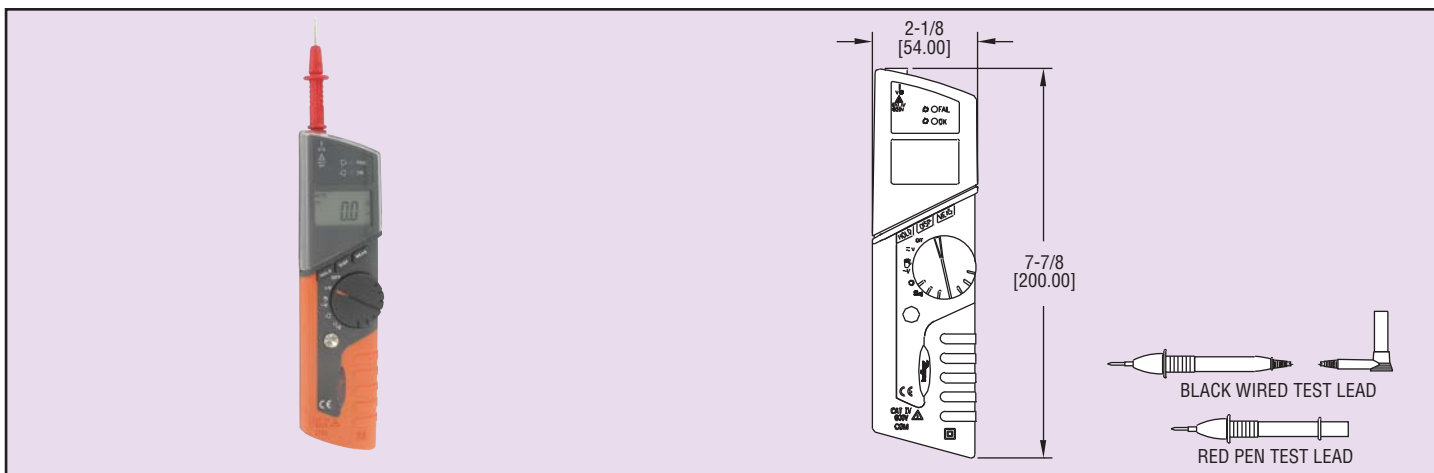**Display:** 4000 counts plus decimal point.
Power Requirements: 2 AA batteries.
Weight: 5.3 oz (150 g).

Dwyer®

Model PM-2

Digital Pen Meter with Phase Rotation
Measures DC/AC Voltage, Resistance, Continuity, Frequency and Phase Rotation

2-1/8 [54.00]

7-7/8 [200.00]

BLACK WIRED TEST LEAD

RED PEN TEST LEAD

Our compact, low cost **Model PM-2 Digital Pen Meter** is ideal for general electrical testing and troubleshooting. A few applications include HVAC, automotive, electrical/power, and environmental monitoring uses. This meter measures DC and AC voltage to 600 V and resistance to 1499 Ω. In addition to volts and ohms, this meter includes continuity, diode, and frequency tests to 69.9 Hz. Along with the mentioned functions, the PM-2 has the ability to perform a phase test from 100 to 600 V. This meter features data hold, display (to show voltage and frequency during AC tests), and clear screen buttons. The 4 digit LCD features value, mode, and low battery indication. The Model PM-2 is furnished with red and black test leads, 2 AA batteries and carrying case with belt clip.

Model PM-2, Digital Pen Meter with Phase Rotation

SPECIFICATIONS
Over Voltage Category: CAT IV 600 V.
AC Voltage: 1.5 V to 600 V ± (1.5% rdg + 5 dgt).
DC Voltage: 1.5 V to 600 V ± (0.8% rdg + dgt).
Resistance: 1 to 1499 ohm ± (1.0% + 5 dgt).
Continuity: Audible buzzer.
Phase Test: 100 to 600 V.
Frequency: 0.1 Hz to 69.9 Hz ± (1.0% + 2).
Display: 6000 counts plus decimal point.
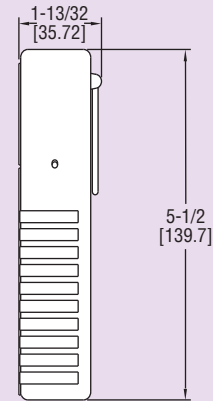**Power Requirements:** 2 AA batteries.
Weight: 5.3 oz (150 g).

Dwyer®

Model CSG

Current/Voltage Signal Generator
Ramp Function, Large Numeric LCD Display

The pocket size CSG Current and Voltage Signal Generator is an ideal tool for troubleshooting transmitters, transducers, motors, and actuators. The unit generates a 0 to 10 VDC signal in increments of 1 volt or a 0 to 20 mA signal in increments of 1 mA. The Model CSG features a large LCD display with a blue backlight for use in dimly lit areas. The Model CSG continuously ramps the output using user selected minimum, maximum, and ramp interval timing parameters. Units are furnished with a 9V battery, 120 VAC plug-in power supply, test leads with alligator clips, carrying case, and instruction manual.

FEATURES
• Large backlit display
• Timed ramp function
• Auto power off

Model CSG, Current Voltage Signal Generator

SPECIFICATIONS
Impedance: Voltage: 1000 min. **Current:** 300Ω max.
Output: 0 to 20 mA (1 mA increments); 0-10 VDC (1 VDC increments).
Resolution: 1 mA (current); 1 VDC (voltage).
Ramping Time Intervals: 1 to 20 sec (1 sec increments).
Ambient Operating Temperature: 32 to 122°F (0 to 50°C).
Power Requirements: 9-Volt battery or 120 VAC (provided).
Auto Power Off: 1 to 20 min.
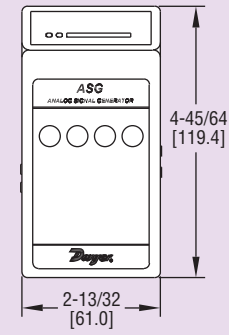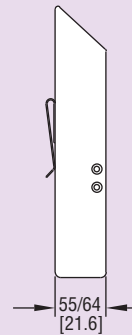**Electrical Connections:** 6 ft (1.8 m) with alligator clips.
Weight: 6 oz (170 g).

Dwyer®

Model ASG

Analog Signal Generator
Ramp Function, Bar Graph LED, Selectable Auto Shut Off

C E

The pocket size model ASG Analog Signal Generator is an ideal tool for troubleshooting transmitters, transducers, motors and actuators. The unit generates a 0 to 10 VDC signal in increments of 1 volt or a 4 to 20 mA signal in increments of 2 mA. An LED bar graph visually indicates analog signal level. The model ASG will also continuously ramp to user defined maximum and minimum values with user defined ramp interval timing. Units are furnished with 6 ft (1.8 m) leads with alligator clips, 120 VAC plug in adapter protective carrying case and instruction manual.

**Model ASG,** Analog Signal Generator

SPECIFICATIONS
Impedance: Voltage: 1000Ω min. **Current:** 300Ω max.
Output: 0 to 20 mA (2 mA increments); 0-10 VDC (1 VDC increments).
Resolution: 2 mA (current). 1 VDC (voltage).
Ramping Time Intervals: 2 to 20 sec (2 sec increments).
Ambient Operating Temperature: 32 to 122°F (0 to 50°C).
Power Requirements: 9-Volt battery or 120 VAC (provided).
Auto Shutoff Times: 2 to 20 min. (2 min. increments) (6 minute default).
Electrical Connections: 6 ft (1.8 m) with alligator clips.
Weight: 3.2 oz (without battery).
Agency Approvals: CE.

Pocket Tachometer

Multi-Function, NIST Certified

CE

BATTERY
COMPARTMENT
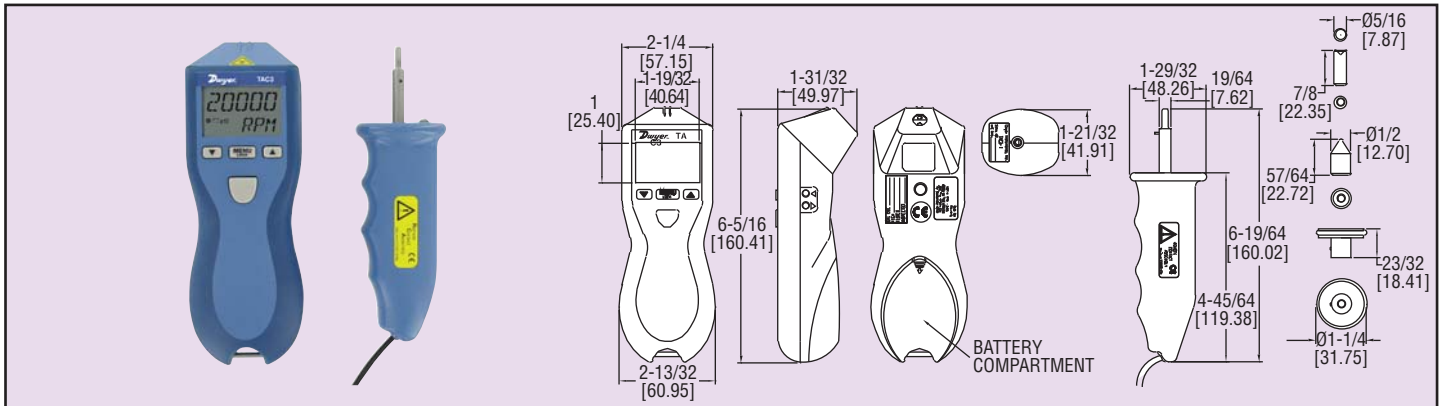
The Series TAC3 Pocket Tachometer measures and displays rotational speed of saw blades, grinders, engines, motors, and conveyor belts. The unique ergonomic design provides direct line-of-sight viewing of display and target. Easy-to-read 5-digit alphanumeric dual LCD also displays on-target, continuous measurement, laser and low batter indication. Measurements of up to 999,999 can be viewed with the on-screen multiplier.

The Model TAC3 is a 32 function tachometer/ratemeter, totalizer/counter, and timer. It is programmable to read in English or Metric units. An input socket accepts remote sensing devices and an output socket allows for pulse output to external indicating devices. The Model TAC3 can be tripod mounted and "Locked-On" for accurate and continuous operation. This tachometer also stores minimum, maximum, and last measurement in memory.

Model TAC3-K Kit comes with tachometer, plastic case, remote contact assembly, concave and convex contact tips, 3.9 in (10 cm) circumference contact wheel, N.I.S.T. certification, and 5 ft (1.5 m) of reflective tape. Optional TAC3-91 Remote Optical Sensor allows this unit to measure rps, rpm, or rph in hard to reach locations.

Model TAC3, Pocket tachometer includes 12″ of reflective tape
and N.I.S.T. certification
Model TAC3-K, Pocket tachometer plus kit

ACCESSORIES
TAC2K-91, Remote optical sensor includes mounting
bracket and 8 ft (2.5 m) cable (optional 100 ft)
TAC-5, Reflective tape, 5 ft (1.5 m) roll, 1/2″ (13 mm) wide
TAC3-1, Remote contact assembly for TAC3 includes 6 ft (1.8 m) cable, convex
and concave tips and 10 cm contact wheel

SPECIFICATIONS
Accuracy: Non-contact: ±0.01% of reading; Contact: ±0.05% of reading; Timer: ±0.2 sec.
Display: Dual LCD display (5 digit upper display / scrolling 5 digit alphanumeric lower display).
Resolution: User-selectable from 0.001 to 1 (10 above 99,999); Timer: 0.1 sec.

Max. Measuring Distance: 25′ and up to 70° from perpendicular.
Ambient Operating Temperature: 40 to 105°F (5 to 40°C).
Power Requirements: 2 "AA" batteries.
Weight: 7 oz (210 g).
Agency Approvals: CE.

Measurement Ranges

| Speed Ranges	Model TAC3	Model TAC3K	
Optical*	5 - 200,000 rpm	5 - 200,000 rpm	
Contact Tips*	N/A	0.5 - 20,000 rpm	
10 cm/12″ Wheel*	N/A	0.5 - 12,000 rpm	
Linear Menu	**Linear Menu**	**10 cm**	**12″**
Inches/Min*	N/A	1.969 - 78,740	6.000 - 144,000
Feet/Min*	N/A	0.164 - 6,561.7	0.500 - 12,000
Yards/Min*	N/A	0.055 - 2,187.2	0.167 - 4,000.0
Miles/Hour	N/A	0.002 - 74.564	0.006 - 136.36
Centimeters/Min*	N/A	5.000 - 200,000	15.240 - 365,760
Meters/Min*	N/A	0.050 - 2,000.0	0.153 - 3,657.0
Totalizer/Counter	0 - 999,999 counts	0 - 999,999 revolutions**	
Timer (Stopwatch)	99 min, 59 sec, 0.9 sec	99 min, 59 sec, 0.9 sec	

*   Also reads units per second and per hour.
** Also totalizes inches, feet, yards, centimeters, and meters.

Waterproof Pocket-Size pH Testers

0.01 pH Resolution

CE

1.5″ [3.8 CM]

6.5″ [16.5 CM]
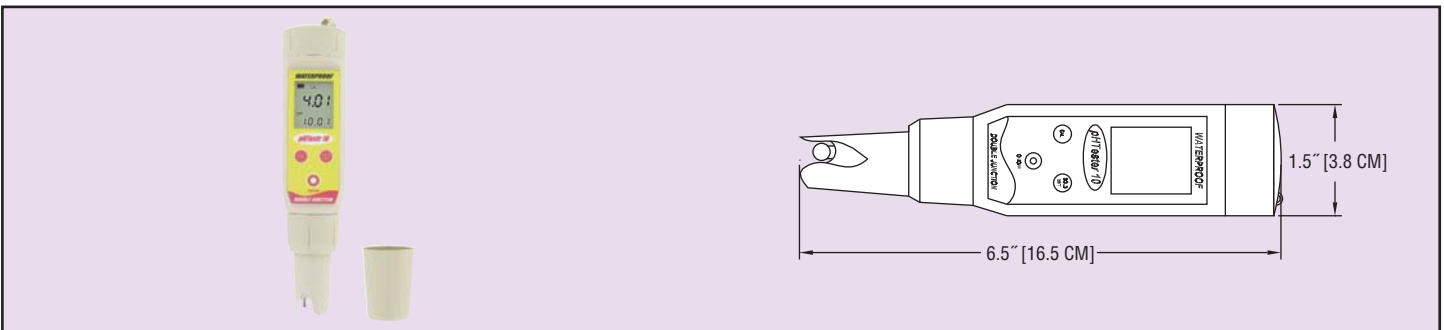
The Series WPH Waterproof Pocket-Size pH Testers are designed to accurately take repeatable readings in a variety of applications. The replaceable double junction sensor contains a regressed glass pH bulb to protect against breaking. The large 4 digit display is easy to read and has a resolution of up to 0.01 pH. The Series WPH comes standard with automatic temperature compensation and can be ordered with a dual pH/temperature display.

Model WPH-10, Water-proof pH Tester 0.1 pH Accuracy
Model WPH-20, Water-proof pH Tester 0.01 pH Accuracy
Model WPH-30, Water-proof pH Tester 0.01 pH Accuracy with Temperature

ACCESSORY
WPH-RS, Replaceable Double Junction Sensor

SPECIFICATIONS
Range: WPH-10: -1.0 to 15.0 pH; WPH-20: 0.00 to 14.99 pH; WPH-30: -10.00 to 15.00 pH; Temperature: 0 to 50°C (32 to 122°F).
Accuracy: WPH-10: ±0.1 pH; WPH-20 and WPH-30: ±0.01 pH.
Display: 4-digit, 5/16″ (8 mm) high LCD.
Resolution: WPH-10: 0.1 pH; WPH-20 and WPH-30: 0.01 pH.
Ambient Operating Temperature: 0 to 50°C (32 to 122°F).

Power Requirements: Four 1.5V LR44 alkaline batteries (Over 500 hours).
Calibration: WPH-10: Up to three points USA/NIST buffers (4.0/4.0, 7.0/6.86, 10.0/9.18); WPH-20 & WPH-30: Up to 3 points US/NIST (4.01/4.01, 7.00/6.86, 10.00/9.18).
Enclosure Rating: IP67.
Electrode: Replaceable double junction.
Weight: WPH-10: 7.2 oz (200 g); WPH-20 & WPH-30: 4.5 oz (125 g).
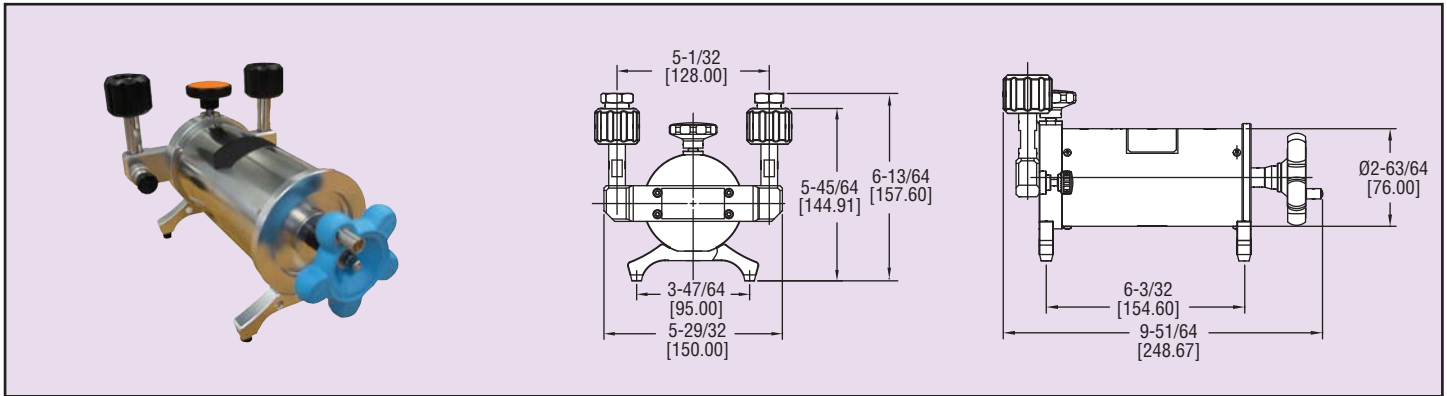**Agency Approvals:** CE.

APPLICATIONS
Water quality testing in pools, spas, aquariums, hydroponics, ecology studies, water and wastewater treatment, boiler/steam generators, printing and chemical industries, sanitation plants and labs.

Model LPCP Low Pressure Calibration Pump

High Resolution for Calibrating Low Pressure Gages and Transmitters

The Model LPCP Low Pressure Calibration Pump is a low air pressure source with the ability to easily adjust and stabilize. This hand pump possesses a pressure range of ± 5.8 psi; uses air as the media, and can adjust the pressure easily with great stability. The LPCP is made up of quick connectors for fast instrument connect and disconnect. The pump has a heat-insulator between the cover and pressure chamber to lessen the heat effect during the micro-pressure calibration. The adjusting resolution is up to 0.01 Pa (0.0001 mbar). These features make the LPCP ideal for calibrating pressure transducers, precision pressure gages, and other pressure instruments.

FEATURES
• Portable
• Pressure resolution: 0.01 Pa; 0.0001 mbar
• Heat insulation and heat preservation, no negative side effects from temperature changes
• Open structure for convenient maintenance of the pumps
• Easy to operate: pressure is precisely set with a simple turn of the handle, allowing you to calibrate gages quickly and accurately
• Great seal performance: minimum leakage

SPECIFICATIONS
Media: Air.
Generated Pressure Range: 5.8 psi (0.4 bar) vacuum to 5.8 psi (0.4 bar) positive pressure.
Pressure Resolution: 0.01 Pa; 0.0001 mbar.
Material:
  Ram/adapters: 316 SS;
  Body: Steel/aluminum;
  Seals: Buna-N.
Test Gage Connection: M20*1.5; 1/2″ NPT with included adapters.
Reference Gage Connection: M20*1.5; 1/2″ NPT with included adapters.
Dimensions:
  Height: 5.7″ (145 mm);
  Base: 6.09″ (155 mm) x 3.73″ (95 mm).
Weight: 2.21 lb (1.0 kg).

Model LPCP-2, Low Pressure Calibration Pump

Model A-396A Calibration Pump

Serves as pressure source to calibrate gages and transmitters or to set pressure switches. Use with manometer or other pressure standard. Includes volume adjuster enabling fine pressure control and bleed valve. Generates pressures from a fraction of an inch w.c. to 72 psig (5 bar). Includes barbed fitting, tee connector and three 36″ lengths of vinyl tubing.
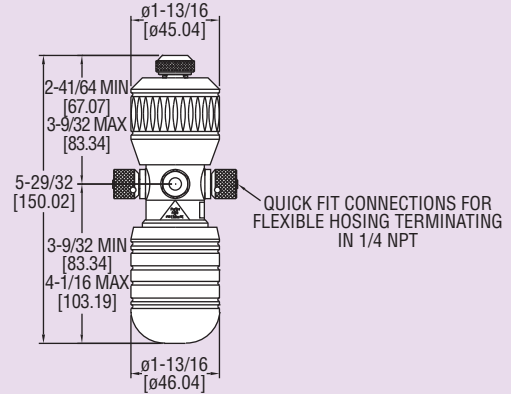
Model A-396A, Calibration Pump

Dwyer®

Model HP
Hand Pump
Generates Pressures up to 45 psig (3 bar), Single Hand Operation

ø1-13/16 [ø45.04]
2-41/64 MIN [67.07]
3-9/32 MAX [83.34]
5-29/32 [150.02]
3-9/32 MIN [83.34]
4-1/16 MAX [103.19]
ø1-13/16 [ø46.04]

QUICK FIT CONNECTIONS FOR FLEXIBLE HOSING TERMINATING IN 1/4 NPT

Model HP Hand Pump provides a dual source of pneumatic pressure and vacuum for verifying the calibration of pressure instrumentation. Pump can generate pressures up to 45 psig (3 bar) and vacuum to -27˝ Hg (-910 mbar). The compact pump is designed for portability and single hand operation.

Model HP features a pressure relief valve and fine adjustment for control better than 0.0015 psi (0.1 mbar). Pump includes two 39˝ (1 m) hoses terminating in 1/4˝ female NPT connections and instruction manual.

Model HP-1, Hand Pump

ACCESSORIES
Model HP-1K, Service Kit
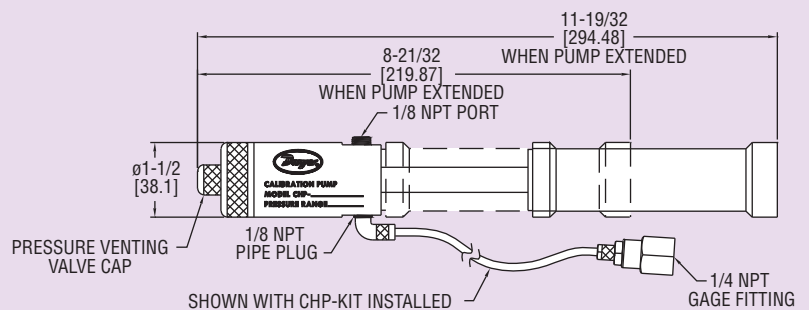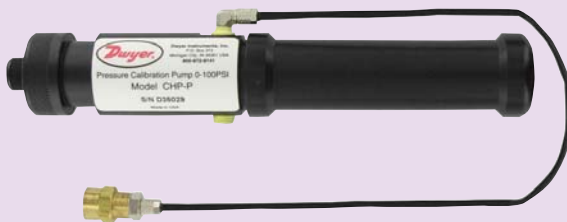**Model HP-1C,** Hard Case

SPECIFICATIONS
Output Ranges: -27˝ Hg to 45 psig (-910 mbar to 3 bar).
Process Connection: 1/4˝ female NPT (quick fit).
Fine Adjustment: Better than 0.0015 psi (0.1mbar).
Materials: Nickel plated brass and anodized aluminum.
Weight: 20 oz (587 g).

Dwyer®

Series CHP
Pneumatic Hand Pump
Vacuum or Pressure, Ranges up to 100 psig

11-19/32 [294.48] WHEN PUMP EXTENDED
8-21/32 [219.87] WHEN PUMP EXTENDED
1/8 NPT PORT
ø1-1/2 [38.1]
PRESSURE VENTING VALVE CAP
1/8 NPT PIPE PLUG
SHOWN WITH CHP-KIT INSTALLED
1/4 NPT GAGE FITTING

The Series CHP Pneumatic Hand Pump is the most dependable and rugged pump for applications up to 100 psi or 28.8˝ Hg Vacuum. The durable Acetel plastic and anodized aluminum construction prevents body heat transfer, resulting in drift-free, accurate readings. The Series CHP is equipped with oversized check valves in order to provide smooth and controlled operation. Dual O-Rings on all pistons ensure the pump to be leak-free. The unit includes a 2 foot long hose, 1/8˝ female NPT gauge fitting, and 1/8˝ NPT pipe plug. An optional hose kit is available so that a tee is not required when connecting a sensor and a calibrator. The Series CHP is ideal for checking calibration of pressure or vacuum gauges, switches, or transmitters.

Model CHP-P, Pressure Calibration Pump
Model CHP-V, Vacuum Calibration Pump

ACCESSORY
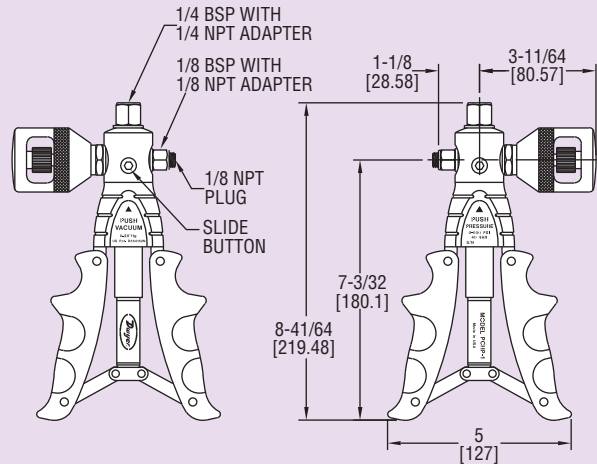**CHP-KIT,** 2´ Hose and NPT Fitting

SPECIFICATIONS
Output Range: CHP-P: 0 to 100 psi; CHP-V: 0 to -28.8˝ Hg.
Process Connection: Two 1/8˝ female NPT ports, one with a removable plug.
Materials: Acetel plastic and anodized aluminum.
Pressure Limit: 150 psig (10.34 bar).
Temperature Limit: Not to exceed 150°F (65.6 °C).
Displaced Volume: Approximately 4 in^3.
Dimensions: 9˝ length x 1.5˝ diameter.
Weight: 1.5 lb (680 g).

Dwyer®

Series PCHP
Pneumatic Calibration Hand Pump
Generates up to 600 psi, Comfort Grip Handles

1/4 BSP WITH 1/4 NPT ADAPTER
1/8 BSP WITH 1/8 NPT ADAPTER
1/8 NPT PLUG
SLIDE BUTTON
1-1/8 [28.58]
3-11/64 [80.57]
7-3/32 [180.1]
8-41/64 [219.48]
5 [127]
PUSH VACUUM
PUSH PRESSURE

The Series PCHP Pneumatic Hand Pump comfortably sources pressure and vacuum to check calibration of gages, switches, transmitters, and recorders. The contoured cushion handles provide extra comfort while preventing the pump from sliding. The oversized check valve provides smooth operation throughout the output range. The dual O-rings on all pistons ensure zero leakage.

Model PCHP-1, Pneumatic Calibration Hand Pump
Model PCHP-1K, Pneumatic Calibration Hand Pump with Hose Kit

ACCESSORY
PCHP-HK, High Pressure Hose

SPECIFICATIONS
Output Ranges: -28″ Hg to 600 psi (-0.945 to 40 bar).
Process Connection: 1/4″ NPT/BSP.
Gauge Connection: 1/8″ NPT/BSP.
Materials: Stainless steel fittings, anodized aluminum housing, plastic/rubber handles, and nitrile o-rings.
Weight: 2 lb (0.91 kg).

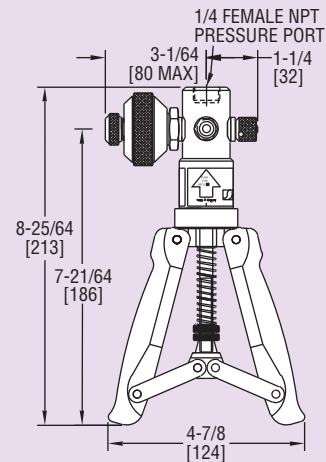# Dwyer®

Model PHP
Pneumatic Hand Pump
Generates Pressures up to 600 psi (40 bar), Portable

1/4 FEMALE NPT PRESSURE PORT
3-1/64 [80 MAX]
1-1/4 [32]
8-25/64 [213]
7-21/64 [186]
4-7/8 [124]

Verify calibration of pressure transmitters, switches, controllers, indicators, and recorders with Model PHP Pneumatic Hand Pump. The Model PHP is a hand operated pump for sourcing pressure and vacuum. Use in conjunction with an analog or digital gage for a complete calibration system.

The unit provides output pressures up to 600 psi (40 bar) or vacuum down to -28.5″ Hg (-0.960 bar). The reliable pump reaches 100 psi in 4 strokes. Model PHP is fitted with a fine adjustment valve for precise volume control and an adjustable stroke to provide over pressure protection.

Model PHP includes a 39″ (1 m) hose with a 1/4″ female NPT quick fit connector. The optional service kit includes seals, O-rings, retaining screws and an allen key.

SPECIFICATIONS
Output Ranges: -28.5″ Hg to 600 psi (-0.960 to 40 bar).
Process Connection: 1/4″ female NPT (quick fit).
Gage Connection: 1/4″ female NPT.
Materials: Nickel plated brass, anodized aluminum, and nylon.
Weight: 1.4 lb (0.65 kg).

Model PHP-1, Pneumatic Hand Pump

ACCESSORIES
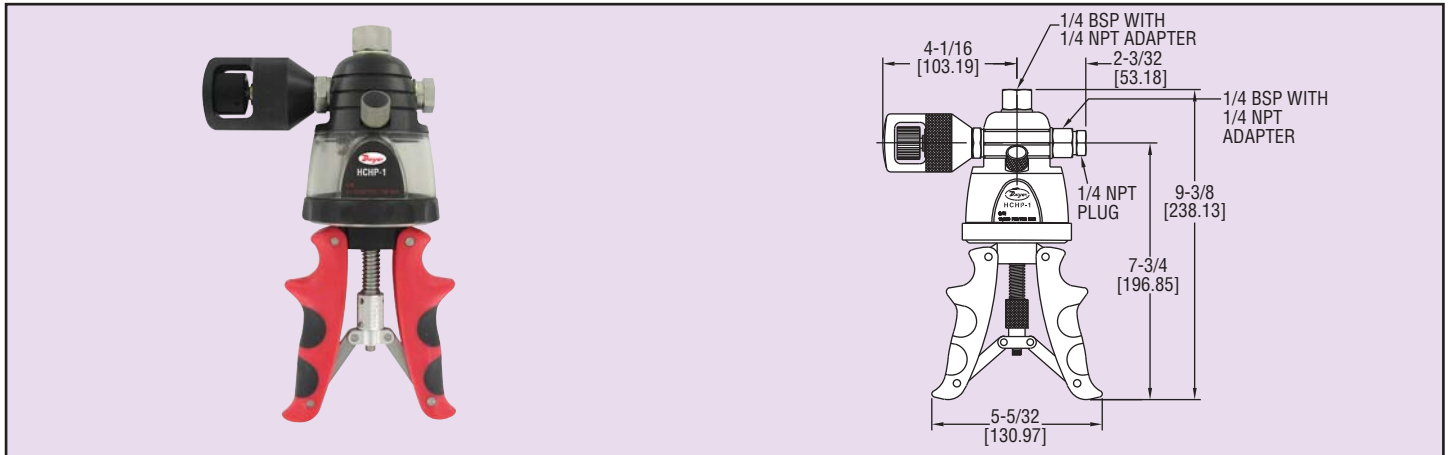**PHP-1K,** Service Kit
PHP-1C, Hard Case

Dwyer®

Series HCHP

Hydraulic Calibration Hand Pump

Triple Filtration, Generates pressure up to 10,000 psi

The Series HCHP Hydraulic Calibration Hand Pump utilizes a fully adjustable stroke control that allows for quick priming, easy pumping and fast pressure generation up to 10000 psi (700 bar). The ergonomically engineered handles provide extra comfort, while the triple filtration system ensures pump operation in spite of dirty conditions. The shatterproof reservoir and stainless steel construction guarantee leak free operation. The Series HCHP has oversized check valves to provide smooth controlled operation.

Model HCHP-1, Calibration Hand Pump
Model HCHP-1K, Calibration Hand Pump with Hose Kit

SPECIFICATIONS
Output Ranges: 0 to 10,000 psi (0 to 700 bar).
Process Connection: 1/4″ NPT/BSP.
Gauge Connection: 1/4″ NPT/BSP.
Materials: SS, polyurethane, anodized hard-coat aluminum, PTFE, and nitrile.
Weight: 3 lb (1.36 kg).

ACCESSORY
HCHP-1F, Spare Washer and Filter Kit

Dwyer®

Model HHP

Hydraulic Hand Pump

Pressures up to 10,000 psi (700 bar), Oil or Water
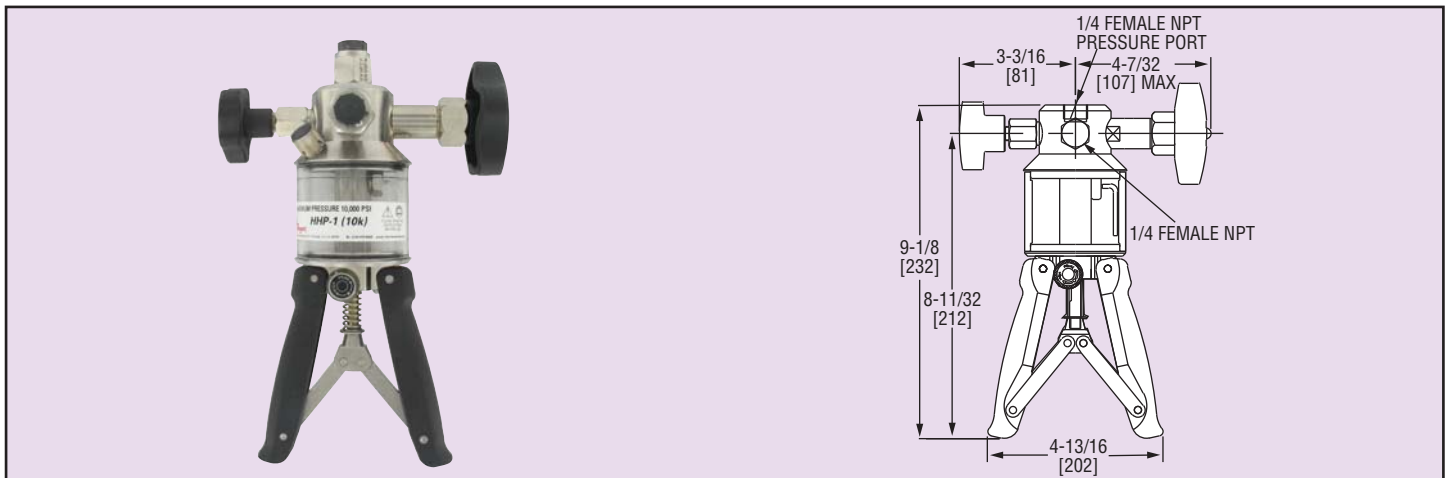
Generate pressures up to 10,000 psi (700 bar) with Model HHP-1 Hydraulic Hand Pump. Scissor action pump allows quick priming and pressure generation. Use in conjunction with an analog or digital pressure gage for a complete calibration system.

The pump is designed with a large, see through reservoir with a capacity of over 4 oz. A variety of fill liquids can be used including mineral oil, distilled water, and alcohol. The sealed stainless steel and tempered glass construction provide leak free operation.
Model HHP offers adjustable over pressure protection, fine control, and a unique selector switch to move from priming to high pressure generation.

Model HHP-1, Hydraulic Hand Pump

SPECIFICATIONS
Output Ranges: 0 to 10,000 psi (0 to 700 bar).
Process Connection: 1/4″ female NPT (quick fit).
Gage Connection: 1/4″ female NPT.
Materials: Stainless steel and tempered glass.
Weight: 3.5 lb (1.6 kg).

ACCESSORIES
HHP-1K, Service Kit
HHP-1C, Hard Case
HHP-6K, High Pressure Hose Kit

TEST EQUIPMENT

Calibration Pumps

Multi-Cal Pressure Calibrator

CE

Interchangeable Ranges, ±0.05% Accuracy, Datalogging Capability, NIST Traceable

Dwyer®

MODULES

4-1/4 [108.0]
1/2 [12.70]
3-1/4 [82.55]
2-7/8 [73.03]
2-3/64 [51.99]
2-11/64 [55.17]
7-7/8 [200.0]
2-17/64 [57.55]
3-1/4 [82.55]
1-3/4 [44.45]
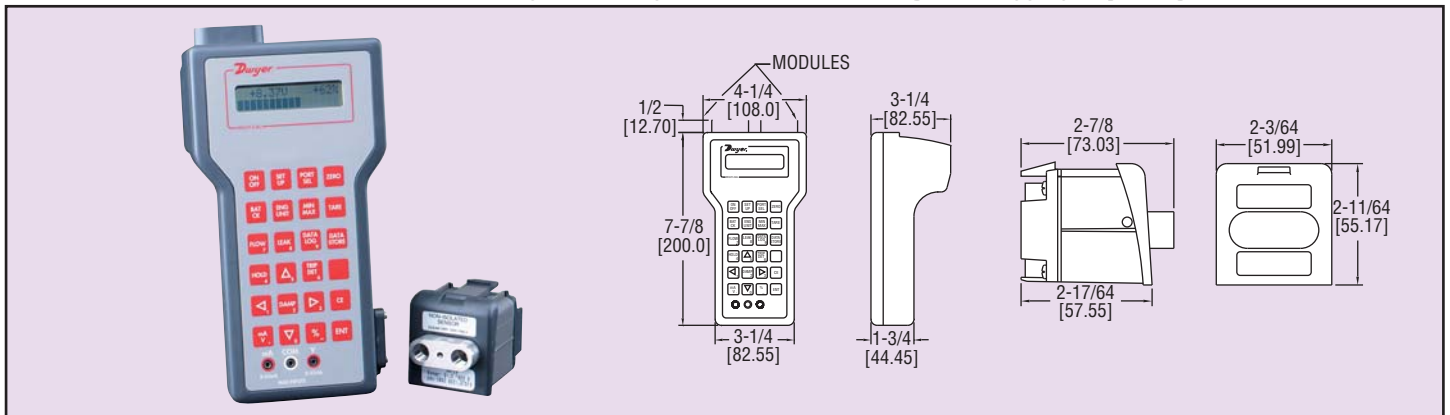
Series MC Portable Multi-Cal Pressure Calibrator performs a wide variety of simple and complex pressure based measurement, test, and calibration operations. Modular sensor design allows user to select pressure measurement range for application flexibility. Calibrator can accommodate up to two interchangeable pressure modules (sold separately below) in any combination of range or accuracy.

Simultaneously display two separate measurements on the two line, alphanumeric display. Readings can be displayed in a choice of 12 preprogrammed engineering units or any single user-defined unit. Calibrator features min/max recall, hi/lo alarm, percentage of full scale pressure readings, mA/voltage measurement, leak rate and pressure decay measurement, switch testing capabilities, including trip point and dead band, and velocity/volume flow rates.

Quickly document calibration procedures using the data logging feature which stores up to 384 sets of pressure and time/date stamped measurements. Easily upload stored data to an IBM compatible computer via the RS232 port. Calibrators and modules include certification to NIST traceability—ideal as a secondary standard for calibrating pressure equipment.

Multi-Cal Pressure Calibrator includes utility software, test leads, protection module, adjustable hand strap, AC adapter, two 9V batteries, instruction manual, and hard carrying case.

Model MC2K, Handheld Calibrator

ACCESSORY
CP40, Serial Printer

Multi-Cal Pressure Modules are interchangeable and available in a wide selection of pressure ranges and accuracies. Handheld calibrator accepts up to two pressure modules. Modules include NIST calibration certification.

Model	Range
MC1000	0.25″ H$_2$O Differential Pressure, ±0.07
MC1001	0.50″ H$_2$O Differential Pressure, ±0.07
MC1004	5.00″ H$_2$O Differential Pressure, ±0.06
MC1006	25″ H$_2$O Differential Pressure, ±0.06
MC2010	5.0 psig Gauge Pressure, ±0.05
MC2012	15.0 psig Gauge Pressure, ±0.05
MC2016	100.0 psig Gage Pressure, ±0.05

OPTIONS
Consult factory for other pressure ranges and accuracies. FM approved models are also available.

SPECIFICATIONS
Service: Clean, dry, nonconductive, noncorrosive gases.
Accuracy: Differential pressure modules: ±0.06% FS; Gauge pressure modules: ±0.05% FS; Voltage input: ±0.025% FS @ 0/10 VDC, ±0.10% FS @ 0/30 VDC; Current input: ±0.03% FS @ 0/20 mA, ±0.05% FS @ 0/50 mA.
Sensitivity: ±0.002% of span with dampening 1 part in 50,000 (max).
Repeatability: Ranges ≤0/2 psi: ±0.05% of span; Ranges ≥0/5 psi: ±0.02% of span.
Output: RS232 serial interface, 9-pin.
Alarm Output: SPST form C 110 VDC, 120 VDC (max.), 1 A (max), 30 W, 62.5 VA (resistive).
Display: Alphanumeric LCD, 0.37″ (9.5 mm) height per line, 2 lines, 16 characters/line.
Display Update: 100 msec.
Ambient Operating Temperature: 32 to 120°F (0 to 49°C).
Storage Temperature: -4 to 158°F (-20 to 70°C).
Process Connection: 1/8″ female NPT.
Electrical Connections: Miniature recessed banana jacks.
Power Requirements: Internal: two 9 VDC alkaline batteries; External: AC adapter 9 VDC, 500 mA.
Battery Life: 30 hours (approximate).
Engineering Units: inH$_2$O, psi, inHg, kPa, mbar, cmH$_2$O, mmHg, and user-defined.
Overpressure: Differential pressure modules: 50 psi positive direction, 15 psi negative direction; Gage pressure modules: 2x range (0/5 psi to 0/1000 psi).
Temperature Compensation: 20 to 120°F (-7 to 49°C).
Temperature Error: Maximum of ±0.004% of span per °F over compensated range for zero and span.
Temperature Effect Electrical Measurement: ±0.001% of span per °F over compensated range.
Dampening: (Measurement averaging) programmable from 0 to 16 consecutive readings.
Baud Rate: 300, 1200, 2400, or 9600, selectable.
Housing Material: ABS plastic.
Weight: Calibrator: 2.2 lb (1.3 kg); Pressure module: 0.5 lb (0.3 kg).
Agency Approvals: CE.

APPLICATIONS
Pressure measurement for clean room control, filter performance monitoring, HVAC testing and setup, draft measurement, airflow measurement control, differential pressure measurement in laminar flowhoods, paint booths, industrial ovens and fume hoods. Use as a secondary standard for calibrating pressure equipment.